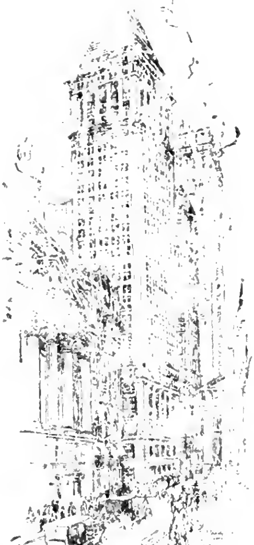
OUR PUBLIC DEBT

Bankers Trust Company Publications



Our Public Debt

An historical sketch with a
Description of United States Securities

By
Harvey E. Fisk

New York
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Preface

NOTWITHSTANDING the great increase in the public debt and the wide distribution of United States bonds among the people during the past two years of war, there has not been available in concrete form a complete description of the bonds or a history of the debt.

Believing that such a description and history would be valued, not only by our own clients, but by investors generally, we arranged for the present publication—the first in a series of pamphlets which we purpose publishing on banking and investment topics.

Our Public Debt has been written by Mr. Harvey E. Fisk, of our Bond Department. Mr. Fisk's familiarity with the subject derived from an experience of years in dealing in United States bonds qualifies him to write upon this subject in an authoritative manner. Mr. Fisk has gone for his facts to official and other original sources, such as the Finance Reports of the United States, the American State Papers, and circulars and other papers published at the time the various loans were issued. The technical descriptions of United States bonds and certificates and instructions in regard to transactions with the Treasury Department are based upon the latest official data and regulations.

The Bankers Trust Company's Tables of Liberty Bond Values, typical pages from which are printed herewith, have been prepared for us by Mr. John S. Thompson, Assistant

Actuary of The Mutual Life Insurance Company, and independently checked by Professor L. P. Eisenhart, of the Mathematics Department of Princeton University. We believe that these tables will be generally appreciated by all dealers and large investors in the Liberty bonds. The complete book of tables may be had by those interested. The excerpts published herewith will be found to serve the purposes of most individual investors.

To complete the series we have also published in uniform style an annotated edition of the laws under which the Liberty bonds and certificates have been issued. Copies may be had by any one interested upon application.

BANKERS TRUST COMPANY

New York, April 15, 1919

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Descriptive

Our Public Debt

Chapter I

Funding the Revolutionary Debt

THE public debt of the United States had its origin in the indebtedness incurred in the prosecution of the Revolutionary War. When in 1789 Alexander Hamilton became the first Secretary of the Treasury of the United States, he found that the new government had inherited from the Confederation an indebtedness of about eighty million dollars. This was divided into three parts, namely, the indebtedness held abroad, the domestic debt of the Confederation and the debts of the individual States, which had been incurred for the common benefit. These debts included a large amount of accrued interest, payment of which, on account of the complete disorganization of the finances of the States and of the Confederation, had fallen into arrears for several years.

In his great report on the public credit, Hamilton recommended that the debt due abroad should be immediately put on an active basis by the payment of the principal and interest which was in arrears and the making of arrangements by which the remainder of the debt would be liquidated at an early date. There was no other opinion held in regard to the treatment of the foreign debt.

There was, however, a wide difference of opinion as to what should be done about the domestic debt of the Confederation because of the fact that the market value of the different securities which had been issued was so low that it

was felt to be unfair to pay those who had acquired their stock by purchase from original owners the par value of their holdings. One suggestion made was that such holders should be paid the current market value and that the difference between that price and par should be paid to those from whom they had acquired their holdings. Hamilton argued, however, that as a practical matter it would be impossible to follow this course and that so far as the Government was concerned it was obligated to pay the indebtedness according to the terms of the obligation, whether in the possession of the original holder or of his assigns, and that this was the only fair course to follow, and his views finally prevailed.

In regard to the debts of the several States there was still hotter controversy. It so happened that the Southern States were not heavily involved in debt. They were opposed to the new government being loaded with the debts of the Northern States, and were very insistent that this course should not be followed. Hamilton took the position that in any event these debts would have to be paid and that it was much better to include all the indebtedness and to have one borrower in the market than it would be to have fourteen borrowers, namely the Federal Government and each of the States. However, in addition to this reason, Hamilton had a better reason for wishing to have the debts of the States assumed by the Federal Government. The ties which bound the several States together were still very weak. There was really no national sentiment. There was thought to be nothing treasonable in talking about the possibility of the newly-made union not being found to be practicable and some other alignment of the States possibly being made. Hamilton felt that if the people of means had their money invested in the national

securities this would tend to create a national sentiment and would be one excellent method of cementing the union. At that time he and Jefferson were still on good terms and Jefferson was willing to help him carry through his debt-paying programme. Jefferson, therefore, gave a dinner at which the representatives of the different States were present and at that dinner terms were arranged whereby, in consideration of withdrawing their opposition to the plan of the assumption of the State debts, the Southern States were guaranteed that the new national capital should be located within their borders. Hence it came about that the capital of the United States is now located on the Potomac and not elsewhere.

Hamilton did not think that the nation was in a position to assume the full six per cent. interest charge upon the domestic debt and the debts of the States. He therefore proposed that for ten years the interest be adjusted to a four per cent. basis by funding these debts into new obligations. His recommendations were adopted by Congress in an Act approved August 4, 1790. This Act provided that for the domestic debt new stock should be given, two-thirds of which should bear six per cent. interest from date and one-third bear six per cent. interest from the year 1800. For the unpaid interest new obligations were given bearing interest at the rate of three per cent. per annum. The debts of the States were funded so that four-ninths should bear interest at the rate of six per cent. from January 1, 1792, and two-ninths from the year 1800, while three-ninths bore interest at the rate of three per cent. from 1792. Congress authorized a new issue of bonds for twelve million dollars, the proceeds to be used in paying the accrued interest on the foreign debt and in paying off that portion of the principal which was past due,

or which the Government had the right to anticipate; to provide a fund for taking care of the first year's interest on the domestic debt and to provide a fund for buying up in the market public debt purchasable below par. This money was arranged for in Holland.

In his second report on the public credit made in January 1795, Hamilton stated that the public debt at that date, exclusive of loans which were temporary anticipations of revenue, amounted to $77,496,468. He urged that provision should be made for the liquidation of the debt and that favorable action should be taken in regard to the recommendation of President Washington for "the adoption of a definitive plan for the redemption of the public debt and to the consummation of whatsoever may remain unfinished of our system of public credit in order to place that credit, as far as may be practicable, on grounds which cannot be disturbed, and to prevent that progressive accumulation of debt which must ultimately endanger all government." He brought forward a plan for a sinking fund which was quite complicated, but through the operation of which, with some modification in procedure made during Gallatin's administration of the Treasury, the debt was satisfactorily liquidated within a comparatively short period of years. In his Report on Manufactures submitted to Congress in December, 1791 Hamilton unquestionably struck a keynote which has been constantly lived up to by subsequent generations and which undoubtedly will always be the sentiment of the American people, namely, that "as the vicissitudes of nations beget a perpetual tendency to the accumulation of debt, there ought to be, in every government, a perpetual, anxious and unceasing effort to reduce that which at any time exists, as fast as shall be practicable, consistently with integrity and good faith."

It may be interesting to note in passing that Hamilton was strongly opposed to the policy of taxing the public funds. He argued that to issue taxable securities was equivalent to putting the Government in a position of saying: "I want a sum of money for a national purpose which all the citizens ought to contribute proportionably; but it will be more convenient to them, and to me, to borrow the money of you. If you will lend it, I promise you faithfully to allow you a certain rate of interest, while I keep the money, and to reimburse the principal within a determinate period, except so much of the one and the other as I may think fit to withhold, in the shape of a tax." He asks, "Is such a construction either natural or rational? Does it not, in fact, nullify the promise, by the reservation of a right not to perform it?" He defines public debt as "a property subsisting in the faith of the Government. Its essence is promise. Its definite value depends upon the reliance that the promise will be definitely fulfilled." Then he says: "Can the Government rightly tax its promise? Can it put faith under contribution? Where or what is the value of the debt if such a right exist?"

Another matter of importance which Hamilton discussed in this report was that of "the right of a government to sequester or confiscate property, in its funds, in time of war." He argues strongly that it is against public policy for a government to attempt to exercise such a right.

Summing up, Hamilton says: "Credit is an entire thing; every part of it has the nicest sympathy with every other part; wound one limb and the whole tree shrinks and decays. The security of each creditor is inseparable from the security of all creditors. The boundary between foreigner and citizen would not be deemed a sufficient barrier against extending the precedent of an invasion of the rights of the former to the

latter." Therefore, in conclusion, he recommends "that there be an express renunciation, by law, of all pretension of right to tax the public funds, or to sequester, at any time, or on any pretext, the property which foreign citizens may hold therein."

The provision made by Hamilton for buying up debt in the market was followed by excellent results, so that public funds which had fallen to extremely low prices both at home and abroad rose steadily in market value to the great advantage both of the Government and of the bondholders. One unfortunate phase of this improvement in the public credit was the speculation in the public funds by which it was accompanied. This speculation led to wild speculations in other securities and in lands and in March, 1792, the speculative excitement came to a head in the first financial crisis experienced in the United States. However, this crisis passed quickly and by autumn general business conditions throughout the States were on a sound basis, thus verifying Hamilton's prediction that if the finances of the Government were put on a sound basis, the business situation would become good and the people prosperous. Hamilton's financial measures, in addition to the funding of the debt, included the creation of the first Bank of the United States, the founding of the mint, providing for a convenient system of coinage and the adoption of a revenue system which would afford the Federal Government an income with which to cover the payment of its moderate expenses and the regular payment of the interest upon the debt as well as make provision for its steady reduction. It may be of interest to note in passing that the first budget of the Federal Government was for $2,839,000, of which less than $600,000 was for current expenses, all the rest being provided for use in connection with the debt.

In addition to the refunding operations referred to above, it was found necessary during Hamilton's administration to make some small additions to the debt principally for the purpose of making good revenue deficits. About seven hundred thousand dollars in bonds were issued for the purpose of acquiring six frigates with which to protect our commerce in the Mediterranean. During this period the Government leaned quite heavily upon the Bank of the United States. Loans from the bank at one time aggregated as much as six million dollars. In 1798 a bill was passed authorizing the President to borrow five million dollars to be applied toward defraying any expenses which might become necessary on account of the strained relations then existing between the United States and France. This loan bearing eight per cent. interest was placed at par, in 1799. The following year about one million and a half dollars additional bonds were placed also bearing eight per cent. interest, but for these bonds the Government obtained a premium of 5¾ per cent.

Chapter II

Commercial Warfare

The Louisiana Purchase

WITH the inauguration of Thomas Jefferson in 1801 the twelve years of Federalist government under the administrations of Washington and John Adams came to an end. During all this time Hamilton as Secretary of the Treasury or as the directive force back of Wolcott and Dexter, his successors in that office, had ably guided the financial interests of the infant nation.

The financier of the Jefferson administration was Albert Gallatin, of Swiss extraction and early training. He did not have the great constructive ability of Hamilton but was well fitted for his office, having for many years been a close student of financial matters, especially of our own national finances. To him we are indebted for the installation of many of the methods for the orderly administration of the affairs of the Treasury Department which have survived to this day. The publication of regular annual reports on the condition of the national finances was inaugurated by Gallatin in 1801. Gallatin was not as successful as a financier as he was as a financial administrator. This fact will become more in evidence when we consider the financial methods which he devised for the conduct of the War of 1812.

When Gallatin assumed office he found that the national debt was slightly less than $80,000,000. This was in round figures an increase of about three million dollars for the

twelve years of the previous administration. When the accounts of the Confederation had all been adjusted the debt actually assumed by the new government was found to aggregate $76,781,953. During the twelve years $7,488,354 of the old debt had been liquidated, but $10,633,400 of new debt had been incurred, a net increase of $3,145,046.

The Federalists had coped with the Indian wars, with the so-called whiskey insurrections in the State of Pennsylvania, had paid tribute to the Barbary pirates and had spent large sums of money in building lighthouses, repairing fortifications and in founding the city of Washington. In addition a beginning had been made in the creation of a navy; "more than forty sail of ship and armed vessels," says a Congressional report, had been built or purchased. Some two million of dollars had been invested in the stock of the Bank of the United States.

Except for a brief period in the early years of Jefferson's administration, from the outbreak of the war between Great Britain and France in 1793 down to the close of the War of 1812 in 1814, we were constantly involved in controversies with first one and then the other of these nations. These controversies frequently threatened to develop in military form. In the light of history we can now see that England was fighting for the freedom of the world against the domination of a personality no less dangerous to the common weal than that other putative demi-god who is now in exile in Holland. All this was not evident to our forefathers and the domineering and tactless methods of our British cousins from whom we had only recently wrested our independence did not help matters. On the other hand our forefathers were still deeply conscious of the debt which they owed to France for her help in their struggle for independence.

In the wars between Great Britain and France the supremacy of the seas fell to Great Britain and she went to great lengths to maintain this supremacy.

Jay's treaty of 1794-1795 had averted war with England, settling a number of questions which had long been causes of friction.

Our first difficulties developed with our recent ally,—France. Almost the first act of Adams' administration had been to take steps to bring the French to terms. Although there had been no declaration of war yet war was actually being carried on upon the ocean. American merchant vessels were seized and carried into French ports and condemned on the slightest pretext.

From this time dates the organization of the Navy Department under the able leadership of Benjamin Stoddert as the first secretary. Within a short time a number of well-equipped ships were in active service. They drove off the French privateers and when peace was restored in 1800 had a record of eighty-four prizes. Meanwhile Napoleon had come upon the scene as the new master of France and with him Adams concluded a treaty of peace which safeguarded the rights of neutrals by restraining the right of search and conceding the principle that free ships make free goods.

When Jefferson took up the reins of office he found a full treasury and a prosperous country. The previous administration had been deriving revenue from customs duties and from very unpopular excise taxes, as well as from sales of lands. One of Jefferson's first acts was to bring about a repeal of the excise taxes. The new party had come into power committed to the payment of the public debt, which they claimed that Hamilton wished to maintain because of his "monarchical" tendencies.

The peace with France having removed for the time being the necessity for extraordinary expenses it was possible for the new administration for several years to effect large annual debt reductions, with the result that Gallatin could report to Congress in 1807 that the "total of public debt reimbursed from the 1st of April, 1801, to the 1st of October, 1807, amounted to about $25,880,000."

The continuance of the depredations of the Barbary powers and the insolent attack of one of them, the Pasha of Tripoli, upon the American Consul in the Spring of 1801, led to a naval war which lasted some four years but which finally resulted in disposing of this menace to our Mediterranean commerce. The expense of this little affair was met by the imposition of a special tax upon imports, the income from which was known as the "Mediterranean Fund."

In May, 1801, Jefferson was much disturbed by the receipt of information that Spain might re-cede Louisiana and the Floridas to France. Our relations with Spain had been quite satisfactory, as she had been willing to allow our vessels from the Mississippi and its tributaries the right to deposit goods at New Orleans free from all government exactions while awaiting trans-shipment to sea-going vessels.

As a matter of fact on October 1, 1800, Spain had agreed to recede the Province of Louisiana to France. The formal order to carry out this agreement was signed on October 15, 1802 and in the following November the Spanish intendant of Louisiana issued a proclamation withdrawing the right of deposit, probably at the instigation of France, although no actual transfer of sovereignty had as yet taken place.

The western people were outraged and demanded immediate war. Jefferson sent a commission to France to take steps looking to "enlarging and more effectually securing our rights

and interests in the Mississippi River and the territories eastward thereof." As a result of the efforts of this commission, aided probably by Napoleon's need for funds to carry on his ambitious military schemes, an opportunity was presented to purchase outright the French title for what it was worth. As Channing says, "Here was an opportunity to gain money by the simple process of selling what a modern stock broker would term a 'call' for the delivery of certain goods, which in this case consisted of one town [New Orleans] and an indefinite amount of wilderness." The price paid was $11,250,000 and the assumption of certain claims of American citizens against France aggregating $3,750,000. To carry out this agreement $11,250,000 six per cent bonds were issued and handed over to France in the early part of 1804. The cash payment was made from the treasury surplus.

Meanwhile the ambitions of Napoleon were daily becoming greater and the hostility between him and England more bitter.

From 1805 on our relations with both England and France were greatly involved. The path of neutrality was a most difficult one to tread.

It is hard to determine whether our grievances against France or against England were the greater. Embargoes and non-intercourse acts on our part; blockades, imprisonment of seamen, seizures of merchant ships, and actual attacks upon our war ships by England; blockades, seizures of ships and threats to treat American seamen if found on English vessels as pirates, even though there against their will, on the part of France, brought about a very serious three-cornered situation.

Foreign trade was disorganized and the revenues of the Government therefrom reduced. A premium was put upon

evasions of the embargoes and non-intercourse acts because of the large profits which could be realized from successful voyages.

In turn France and England encouraged or combated this trade as it served their interests to do so. In one year it is estimated that the French seized vessels which with their cargoes were worth at least $10,000,000, and all told she is said to have seized after 1801, 558 vessels against seizures of 917 by the British. However, the Administration selected Great Britain as the greater sinner and on June 18, 1812, declared war against her,—a war which probably might have been averted if the Atlantic cable had then been laid, as on June 23d the British Cabinet before they knew of our declaration of war had assumed a conciliatory attitude by withdrawing certain obnoxious decrees.

Chapter III

The War of 1812

ALTHOUGH trouble had been brewing for years the advent of this war found the country in every way quite unprepared. As far back as 1807 Gallatin had discussed in his annual report the proper method of financing war if it came and this method was the one adopted. His theory was that the war expenses should be financed by loans and the taxes increased only enough to provide for the interest thereon. For several years the treasury revenues had been large, the redemptions of debt substantial and a cash balance had accumulated of around eight million dollars. The Administration was evidently apprehensive as to how tense the international complications might become in the early future. Gallatin realized that the revenue would be considerably impaired by a war. He also realized that a maritime war would immediately affect almost every individual in the community because not only commercial profits would be curtailed, but principally because a great portion of the agricultural produce necessarily required a foreign market. Continuing his argument, he said, "the reduced price of the principal articles exported from the United States will operate more heavily than any contemplated tax." He therefore reached the conclusion that "the losses and privations caused by the war should not be aggravated by taxes beyond what is strictly necessary," namely "to provide for the interest of war-loans."

In his report for 1808 Gallatin refers to the fact that as the "decrees of France can be enforced only in her own

territory, and in those of her allies," they cannot materially affect our commerce. He then adds "but Great Britain, having the means of enforcing her orders on the ocean, the navigation of that element cannot be resumed without encountering those orders; and they must either be submitted to or resisted. And this, however done, and by whatever name called, will be war." He then restates his "belief that loans should principally be relied upon in case of war," and says flatly "no internal taxes, either direct or indirect, are therefore contemplated, even in the case of hostilities carried on against the two great belligerent powers."

In his report dated November 22, 1811, Gallatin reviews with justifiable pride the results of his administration of the Treasury in the handling of the public debt. In the ten years and nine months which would have elapsed by the end of the year, the foreign debt of $10,075,004 would be paid in full, as well as $35,947,806 of the old domestic debt, making total payments of $46,022,810. The amount of old debt unredeemed was $33,904,189. Adding the Louisiana 6% stock, a new debt of $11,250,000, the whole amount of the public debt on the 1st of January, 1812, would be $45,154,189 as against $79,926,999 on April 1, 1801. In addition there had been paid $3,750,000 in cash called for by the Louisiana purchase and around $3,000,000 in cash to British creditors of American debtors, the settlement of whose claims had been a matter in dispute with Great Britain ever since the close of the Revolutionary War.

The reduction of the annual interest charge, notwithstanding the addition of $675,000 for the interest on the Louisiana stock, was from $4,180,463, April 1, 1801, to $2,222,481 January 1, 1812. Gallatin points out that this result was accomplished without the aid of any internal taxes and

notwithstanding the great diminution of commerce during the last four years of the period. He argues that this demonstrated ability to discharge debt rapidly from the income of customs duties justifies in the event of war a reliance upon borrowing in preference to "a total change in the system of taxation." He reaches this conclusion because of his observation that revenue depending almost entirely on commerce is in time of war hardly competent to support the expenses of a peace establishment, yet, in time of peace, is almost sufficient to defray the expenses of a war, and thus permits of the accumulation of a surplus sufficient to reimburse without any extraordinary exertions a debt contracted during five or six years of war.

This obsession on Gallatin's part in favor of an exclusive loan policy was shared by Congress, which, however, went one step farther and declined even to levy taxes with which to meet the interest upon the increased debt or to offset the shrinkage in customs revenue which Gallatin realized, and Congress should have realized, would inevitably result from a war with the greatest maritime power of the world.

Another event which tended still further to aggravate the situation was the failure of Congress to recharter the Bank of the United States, so that the Government had no adequate banking support during the war. Specie payments were suspended by most of the banks outside of New England in August, 1814. The depreciation in the values of bank notes and their varying values in different sections of the country added greatly to the difficulties of financing the war and to the expense. In a report submitted to Congress in 1830 when the affairs of the second Bank of the United States were under discussion, it is estimated that the specie value of the receipts of the Treasury during the period of the War of 1812

was cut in half because of this depreciation of the notes of the banks.

The expenses of the Government from January 1, 1812, to September 30, 1815, are stated by Dallas in his very able report for the year 1815 to have been $133,703,880. Most of these disbursements were occasioned by the war, although the old debt had been decreased during the period by the amount of $5,899,638, leaving the sum of $127,804,241 to represent the current expenditures of the period. During the same period the new debt increased $80,500,073—equivalent to about 62% of the total expenditures for the period. The remaining 38% was derived from revenue for although Congress did not take any important steps towards increasing internal taxes, until the special session held September, 1814, to March, 1815, the receipts from old sources exceeded expectations. This was especially true of the year 1815 when there was a great increase in customs revenue due to the revival of commerce following the declaration of peace.

The eighty odd million of new debt was about eighty per cent in the form of funded debt and the remainder was chiefly in the form of Treasury notes.

The unpopularity of the war in the New England States and in New York made it difficult for the Treasury to float loans. This difficulty was added to by the indisposition of Congress in the early years of the war to lay taxes sufficient even to offset the shrinkage in the customs revenue. A 6% loan of $11,000,000, twelve years to run, was offered in 1812, but only about $8,000,000 taken. To raise $16,000,000 by loan in 1813, it was necessary to sell $18,109,377 6% bonds at 88. In the same year about $8,500,000 bonds were sold at 88¼. In 1814 the Government credit was so poor that 6%

bonds had to be offered as low as 80% in order to find a purchaser, at which price about $15,000,000 bonds were sold.

Under these conditions the Treasury Department turned in desperation to the issuance of Treasury notes. The first issues of these notes made in 1812-1814 were receivable in payment of duties and taxes and for public lands. They were payable within a year and bore interest at the rate of $5\frac{2}{5}$% per annum. In 1815 two new kinds of notes were authorized and offered. One series of notes bore the customary $5\frac{2}{5}$% interest but was made exchangeable for 6% funded stock, as well as being made receivable for all payments due to the United States, but, however redeemed or surrendered, these notes were liable to reissue in like manner as originally issued. The notes of the other series, known as "small treasury notes," bore no interest but were exchangeable for funded stock bearing 7% interest. The Treasury notes were all sold at par. A small amount of the last issue brought a premium.

Except this series, of which notes were issued in various denominations, even as low as three dollars, no notes were issued of smaller denominations than one hundred dollars.

The gross amount of Treasury notes issued 1812–1815, inclusive, not including re-issues, was $32,457,040; the amount outstanding at the close of 1815, deducting $6,361,125 notes held in the Treasury cash, was $17,515,504. Quite large issues were made during the year 1816 but by the close of 1817 practically the entire amount of notes issued had been retired.

The experiment had come dangerously near to developing into a legal tender issue. As a matter of fact the notes never circulated to any important extent, as the interest-bearing feature of the earlier issues and the conversion features made it more advantageous to hold them than to circulate them.

In addition to bonds and Treasury notes there were several temporary loans arranged during the course of the war, including one for $225,000 to meet the expense of rebuilding the White House and the Capitol which had been burned by the British during their brief occupancy of Washington.

The gross debt on December 31, 1815, was $133,403,466. Deducting from this amount the Treasury notes for $6,361,-125 held in the Treasury cash, we find that the amount of debt actually outstanding in the hands of the public was $127,042,341, the maximum debt from the founding of the government until the Civil War. Included in this amount was the sum of $3,084,252, Mississippi stock, so called because issued to indemnify certain claimants of public lands in the Mississippi Territory. This stock did not bear interest and was payable out of moneys to be realized from the sale of lands in the Territory.

Chapter IV

Surplus Financing

FOR a period of twenty-one years, 1816 to 1836, inclusive, the annual income of the National Treasury usually exceeded expenses and in most years the excess was very substantial. The revenues were derived chiefly from customs duties, as the internal revenue taxes were repealed in 1818.

There was not a year during the period in which there was not a net reduction in the public debt.

In order to remedy the impossible banking and currency situation referred to in the last chapter, resulting from the elimination in 1811 of the first Bank of the United States, it was deemed advisable to charter another national bank. Accordingly the second Bank of the United States was chartered with an authorized capital of $35,000,000 and went into operation on January 1, 1817.

The United States subscribed for one-fifth of the capital stock and the bank agreed to pay $1,500,000 to the United States in consideration of the exclusive privileges conferred on the corporation. These privileges were that during the life of the bank no other bank should be established by authority of the United States except in the District of Columbia. The notes of the bank, payable on demand, were to be received in all payments to the United States and the deposits of the moneys of the United States were to be made in the bank or in its branches, unless the Secretary of the Treasury should at any time otherwise order and direct.

To provide its share of the capital the United States issued to the bank $7,000,000 5% stock which the bank was privileged to sell. The balance of the stock of the bank was offered for public subscription and was eagerly taken by 31,334 persons, all but three thousand of whom resided in the Middle States.

It is outside of our present purpose to pursue the history of the bank or to attempt to discuss the many bitter controversies which were waged over its affairs until President Jackson summarily severed its relations with the Government in 1833.

By an Act approved March 3, 1817, Congress appropriated the sum of $10,000,000 a year for the debt service, any surplus after meeting interest charges to be applied to the reduction of the principal.

In 1817 no less an amount of debt was paid off than $16,938,709, making a net reduction in two years time of nearly $24,000,000, notwithstanding the issuance of the $7,000,000 in exchange for the stock of the bank.

How this was made possible will be readily understood when it is remembered that following the declaration of peace and the return of unrestricted foreign trade, the revenues of the Government had jumped from only $11,500,000 in 1814 to $49,893,000 in 1815 and $36,743,000 in 1816.

The next year was also a prosperous one but, in 1819, a severe industrial and commercial crisis occurred, the effects of which did not pass away for several years. Therefore, to meet treasury deficits due to these conditions, it became necessary in 1820 and also in 1821 for the Government to again borrow:—about $3,000,000 at 5% and 6% in the first year and about $5,000,000 at 5% in the second. In 1824 the Gov-

ernment borrowed $5,000,000 at 4½%, the proceeds being used to pay Spain for the Province of East Florida.

In his report for 1831, Secretary McLane, looking forward to the complete extinguishment of the debt within three or four years, reviews the accomplishments of the seventeen years which had elapsed since the close of the War of 1812. Beside a net reduction in the debt of over one hundred million dollars, the frontier had been extensively fortified, naval and maritime resources strengthened, contributions had been made for internal improvements, the valuable territory of Florida purchased and, he might have added, $7,000,000 invested in the stock of the bank.

He then considers what is to be done when the debt is no longer available as a means to absorb the surplus revenues. He suggests the sale of the stock of the bank and the application of the proceeds to the payment of debt. This would stop the income from that source. Then the public lands might be sold to the States within which they were located and the proceeds pro rated among all the States, thus this source of income would cease. He then discusses at great length the revision of the customs duties from which the Government derived the bulk of its income. He suggests that the necessary changes should be made with due regard to the interest of all the people and of all lines of business and in such a way as not to injure the manufacturers, but, he says, the latter should be satisfied "with a moderate and gradual protection, rather than by extreme measures to endanger the public tranquillity."

Realizing that after all that could be done to reduce revenues they would still be much in excess of the normal requirements of the Government, he gives a long list of objects to which the anticipated annual surpluses might be devoted.

Summarized, these objects were:—augmenting naval and military resources; placing naval officers on a parity with army officers as to pay and emoluments; removing obstructions from western waters; surveying and improving the coast and harbors for the benefit of commerce and navigation; increasing the pay of customs officers and placing the diplomatic service on a better basis as to salaries and emoluments. Most of them, perhaps all, were very worthy objects.

He was opposed to undertaking any scheme of internal improvements or of financing such improvements to be made by the States.

Secretary Taney was able to state in his report made in December, 1834, that on January 1, 1835, the entire outstanding balance of debt, would be paid or provided for. Thus, he says, "the United States will present that happy, and probably in modern times, unprecedented spectacle of a people substantially free from the smallest portion of debt."

Reference has already been made to the periodical discussions which had occurred as to what use should be made of the Treasury surpluses after the debt no longer existed to act as a regulator.

The troublesome factor in the situation was that customs duties were laid primarily not for revenue but for the protection of the infant manufacturing industries of the nation.

The palpable injustices and inequalities of the tariff laws had led to a dangerous political situation which was corrected by an act of Congress which became a law on March 2, 1833. This law provided for a gradual reduction in duties beginning January 1st, 1834, and ending July 1st, 1842. This act provided that after the latter date there should be a uniform duty of twenty per cent upon all articles, a reduction from an average rate of about thirty-two per cent collected in 1833.

The result was a sharp falling off in the revenues from customs in 1834, nearly 50%. However, they increased again in 1835 and in 1836 were nearly back to the old basis. Meanwhile 1835 and 1836 witnessed an unprecedented increase in the revenues from the sales of public lands. These receipts which prior to 1833 had averaged considerably less than $3,000,000 a year, jumped to nearly $4,000,000 in that year, to nearly $5,000,000 in 1834 and then shot up to $14,757,000 in 1835 and to $24,877,000 in 1836, giving the Government an income of $50,826,000 for the year, an amount even greater than that for the phenomenal year 1816 and from thirty per cent to sixty per cent greater than for any intervening year.

The causes for these extraordinary increases in income must be sought in the unnatural stimulation given to speculation and business by the banking and currency blunders of the Administration in connection with its fight against the Bank of the United States.

President Jackson was opposed to the making of internal improvements by the Federal Government, believing such a course to be both unwise and unconstitutional. A plan which had been proposed for dividing the surplus among the States also was believed to run counter to the Constitution. Finally the decision was reached to deposit with the States "the money which shall be in the Treasury of the United States on the first day of January, 1837, reserving the sum of five million dollars." This decision was embodied in an act of Congress approved June 23, 1836. The deposits were to be made in four quarterly instalments, beginning January 1, 1837. They were not to bear interest.

It may be added in concluding this chapter on the surplus finances of the Government that the amount of surplus found to be divisible, after deducting the working capital of

$5,000,000, was $37,468,859, calling for quarterly distributions of $9,367,214. Two distributions were made and paid in specie. The third instalment was paid in depreciated bank notes, the panic of 1837 having resulted in a general suspension of specie payments in May of that year. The fourth instalment was never paid. The surplus was a thing of the past.

Chapter V

Financing Deficits and The Mexican War

THE period which elapsed between 1837 and 1861 was one of the most eventful in the history of our country. Politically, the old controversy between those who respectively upheld the doctrines of state rights and of nationalism crystalized more and more about the question of slavery. The tariff and the management of the public finances were causes for much debate and bad blood in and out of Congress.

The great influx of immigrants and the incidental settlement of the middle and far west developed a new nation, very different in its view point from that of the generation which was passing off the stage. This development followed naturally the introduction of steam navigation and steam railroads and in turn led to a great extension of these facilities. The new inventions in the industrial field brought about the factory system and the concentration of population in towns and cities. The electric telegraph transformed the methods of communication. There was, too, a great intellectual and spiritual awakening. Social reforms were everywhere in progress.

During this time the war with Mexico was fought and our southwestern boundaries established. California, one of our acquisitions from Mexico, was soon a powerful state, because of the discovery of gold within her borders. With the exception of the trouble with Mexico, our foreign relations were amicable. It was during this period that all matters in con-

troversy with Great Britain in regard to our northwestern boundary line were satisfactorily settled.

Just as the first stage in our industrial development had ended in the commercial crisis of 1819 and the second in the crisis of 1837, so the third had to pass through a similar time of distress in 1857. As we have seen, the prosperous years following the conclusion of the second war with Great Britain came to a distressing end in 1837. The National Government which had been seeking ways and means to dispose of a surplus and had finally transferred over twenty-eight million dollars to the States, suddenly found itself, even while in the process of making this distribution, facing an empty treasury. In his report for 1837 Secretary of the Treasury Woodbury pointed out that there would be a deficit for the year of over $12,000,000 and he estimated that in order to meet the expenditures of 1838 he would need to borrow around $10,000,000.

With the exception of four years, viz.:—1839, 1844, 1845 and 1846, there was not another Treasury surplus until 1850; then for eight years there were surpluses again. In the following years up to the beginning of the Civil War there were heavy deficits. The distinguishing feature of the Government financing for this period is the preference given to the use of Treasury notes which had to be renewed from year to year rather than to that of the sale of funded obligations.

Out of $236,400,000 borrowed from 1837 to 1860, inclusive, $133,591,000 or 56.51% was taken in the form of notes. A large portion of the bonds was issued for the purpose of funding notes.

These notes were similar to those used in connection with the financing of the War of 1812. In fact some of the issues are said to have been printed from the same plates. Most of

the issues carried interest at rates current for high class paper, but a number of issues were made bearing only a nominal interest rate of one mill per cent. per annum, with the expectation undoubtedly that they would circulate as currency. This did not happen, however, as the fact that the rate was nominal led the holders to cash them in at the first opportunity.

The notes were issued in payment of debts due to the United States, to such public creditors or other persons as chose to receive them in payment at their par value. They were drawn to order, but were transferable by delivery and assignment. They were receivable by the Treasury in payment of duties and taxes, also in payment for public lands. Most of the issues provided that when received into the Treasury they might be reissued, but the amount which could be outstanding at any one time was strictly limited.

The authority to issue such notes was seriously questioned by strict constructionists of the Constitution. They believed that the issuance of such notes, especially at nominal interest rates and upon a promise to repurchase upon demand, was a clear evasion of the inhibition of the Constitution against the issuance of paper money.

That their fears were not groundless that the effort might be made to issue such notes for use as money is evidenced by the discussion of this subject to be found in the report of Secretary Spencer for the year 1843. A portion of his argument is quoted here not only for its bearing on this particular point but more especially as it puts in very clear form the reasons generally advanced by the advocates of the use of such notes. He says: "The exigencies of the Treasury demanded that the effort should be made to relieve it of such a weight of interest, [as would be made necessary by the

issuance of stock or of notes bearing a high interest rate] especially as it would not preclude a return to the system which invites banks to hoard Treasury Notes, by allowing them an interest, while they borrow of the community, without interest, to the extent of their circulation.

"The authority given by the Constitution to 'borrow money on the credit of the United States,' in its terms comprehends every form of loan which Congress may think proper to prescribe; and it is not easy to perceive how this express and unqualified grant of power can be limited or curtailed. Certain it is that the most distinguished among those who contend for a strict construction of the Constitution, have given their sanction to the existence of this power, in form of bills of credit or Treasury Notes.

"Well-founded objections exist to borrowing, without an urgent necessity, in the form either of permanent loans or those of a temporary character. That necessity must also influence the terms and conditions of either mode. The former by putting off the day of payment to 'a more convenient season' removes the most effectual check to prodigality, and offers a temptation of difficult resistance. It has, accordingly, proven the bane of all governments.

"The policy of the Treasury note system seems to have been devised to guard against this evil [of putting off the day of payment to 'a more convenient season'] by bringing the day of payment close upon that of expenditure; and it would seem that the more immediate the liability to pay, the more would that policy be promoted." . . .

"Every loan thus made directly from the people [at a nominal interest rate] is in fact made not in consideration of the interest agreed to be paid by the Government, but literally and solely upon 'the credit of the United States.'"

He then argues that if the notes in addition to serving the purpose of the Government are "kept in circulation to any considerable extent, by our fellow citizens, for their own convenience in maintaining internal trade, and keeping down the fluctuations of exchange between different parts of the country, arising from a disordered currency, it is not perceived how such a result affords ground for objection to a system constitutional in itself and adopted for legitimate and constitutional objects."

He further argues that the Government is not responsible "for the use or abuse by the people of the evidence of that debt which it may issue."

The fact is that the notes never did circulate to any important extent as money. Spencer's views in regard to making the notes attractive for such a purpose were not generally shared and therefore the rates of interest offered were substantial and the notes were readily absorbed as a prime investment. In fact they were frequently quoted above par, their market quotations fluctuating with the money market.

Secretary Ewing in his report for 1841 in discussing the needs of the Treasury strongly advised against the use of Treasury notes, finding such issues objectionable because "by this means a heavy debt may be raised and fastened permanently upon the country, the amount of new issues being involved with the payment of the old, while the people and even those who administer the finances, may not be impressed with the important fact that a national debt is created or is in process of creation.

"Therefore, in the opinion of the undersigned, when a national debt does exist, and must continue for a time, it is better that it should be made a *funded debt* according to our

ancient financial usage. It is then sheltered by no cover and is subject to no delusion."

The principal purposes for which bonds or notes were issued during this period, besides financing the Treasury deficits of the early and later years, were to finance the war with Mexico and to adjust accounts with the Republic of Texas when she became a State of the Union.

The cost of the Mexican War is estimated to have been $63,605,621. Of this amount $14,605,621 or about 23% was met from revenue and for the balance of $49,000,000, bonds and notes were issued. Contrary to the experience of the Treasury in financing the War of 1812 every dollar of debt sold realized par in specie. This was due to the discontinuance of the policy of depositing the revenues of the Government in banks and of substituting therefor the Independent Treasury system. By this system the operations of the Government were wholly divorced from the banks and all payments to or by the Treasury were made in specie. The adoption of such a system became a practical necessity after President Jackson's removal of the deposits from the second Bank of the United States had left the Government without any reliable banking facilities. The Independent Treasury system or, as Secretary Guthrie liked to designate it, the "Constitutional" treasury system continued in operation until the Federal Reserve System recently came into being. It saved the Government from losses but at times, especially when large surplus revenues accumulated, it operated to lock up funds in the Treasury to the great detriment of the business interests of the country. For years the only manner in which Treasury surpluses could be released and returned to the channels of business was by the payment or purchase of the public debt. The existence of such a debt was almost a necessity for

regulatory purposes and the Secretary of the Treasury became the most powerful financial officer in the world. The safety of the business interests of the country was to a great extent in his keeping.

The maximum debt following the liquidation of 1835 and prior to the Civil War was $68,304,796 on July 1, 1851.

As Treasury surpluses caused apprehension and alarm in commercial and financial circles, means were taken during 1853 to restore these accumulations to circulation by purchasing bonds and also by putting the mint in funds to buy silver and gold bullion for coinage. Premiums were paid as high as 21%.

In his report for December 6, 1856, Secretary Guthrie writes: "The Independent Treasury may exercise a fatal control over the currency, the banks and the trade of the country, and will do so whenever the revenue shall greatly exceed the expenditures.

"There has been expended, since the 4th of March, 1853, more than $45,525,000 in the redemption of the public debt. This debt has been presented from time to time, as the money accumulated in the national treasury and caused stringency in the money market. If there had been no public debt, and no means of disbursing this large sum, and again giving it to the channels of commerce, the accumulated sum would have acted, fatally, on the banks and on trade. The only remedy would have been a reduction of the revenue, there being no demand and no reason for increased expenditure."

In 1857, the financial crisis of that year, which had cast its shadow ahead, broke over the country with great force. In the beginning of that year the Treasury held nearly $18,000,000 in cash, but it was a year of diminishing receipts

and a deficit for the following year was clearly forecast. However, during the year the Treasury had tried to alleviate the distress by continuing the purchase of debt. The Secretary, Howell Cobb, reasoned that if, as a result of following this course, the Treasury was compelled to resort to a loan "it would suffer no injury from having the character of the loan changed from debts falling due at a distant period to Treasury notes, at a less rate of interest, and which could be redeemed at the pleasure of the department."

There was no further important happening connected with the history of the public debt until four years later, when the outbreak of the Civil War brought the country face to face with financial problems of a most serious character.

Chapter VI

Civil War Financing

ON July 4, 1861, President Lincoln convened Congress in special session in order that they might "give the legal means for making this contest [with the States in rebellion] a short and decisive one." He recommended that Congress "place at the control of the Government, for the work, at least four hundred thousand men and $400,000,000." On the same day the Secretary of the Treasury, Salmon P. Chase, reported to Congress in regard to the condition of the Treasury and made recommendations as to ways and means for conducting the war.

His policy was expressed in the following words:—"It will hardly be disputed that in every sound system of finance adequate provision by taxation for the prompt discharge of all ordinary demands, for the punctual payment of the interest on loans, and for the creation of a gradually increasing fund for the redemption of the principal, is indispensable. Public credit can only be supported by public faith, and public faith can only be maintained by an economical, energetic and prudent administration of public affairs, and by the prompt and punctual fulfillment of every public obligation." This was identically the same theory of war financing as that advanced by Gallatin in 1807, when discussing the ways and means of financing a possible war with Great Britain or France and was the policy which was followed with such unsatisfactory results in financing the War of 1812.

The situation was complicated in 1861, just as it had been in 1812, by the fact that there was no strong central bank, around which the banking interests of the country could rally to the support of the Government.

Chase had already demonstrated in the four months in which he had been in office how little reliance for help of an important character could be put upon the bankers of that day. There was no way to mobilize the financial resources of the country.

In his report for 1862 Chase estimated that the banks, which, by the way, had all suspended specie payments in December, 1861, had about that date circulation $130,000,000, deposits $264,000,000 and loans $607,000,000, or total resources of around one billion dollars. Each group of banks was a law to itself. In fact there was not even the concert of action between banks in any given group which such an exigency required.

This state of affairs was the principal reason advanced in support of the policy of the issuance of United States notes which was one of the measures adopted by Congress in the special session of 1861. This first issue was limited to $50,000,000, and up to the date of the general suspension of specie payments every note presented for payment was promptly redeemed in coin. This issue was accepted also in payment for customs duties. In the following year, on the 25th of February, Congress enacted a law providing for an issue of $150,000,000 United States notes, which were to be lawful money and a legal tender in payment of all debts, public and private, except duties on imports and the interest on the public debt. Subsequent legislation increased the authorized issues to $450,000,000 and this maximum was reached in June, 1864. The right of legal tender was also

given interest-bearing Treasury notes of which $477,595,000 were issued; a total of obligations having legal tender rights amounting to nearly $1,000,000,000.

The reasons advanced by the advocates of the issue of legal tender notes, more particularly the "Greenbacks" or non-interest bearing notes, were various. Perhaps that having the greatest justification was that the people could obtain a currency uniform in character and in value throughout the Union, instead of a bank currency of fluctuating and uncertain value, and liable to have no value in case of the failure of an issuing bank. It was also frequently stated by Secretary Chase that through such an issue the Government obtained needed funds at a large saving in interest! Little did he realize what a tremendous price would be exacted for this interest immunity, because of the great actual discount at which future loans would be sold, nor what the cost was to be of restoring the currency to a specie basis and of maintaining it on such a basis. Then there was the plea of necessity, "no other mode of providing, with any tolerable degree of promptitude, for the wants of the army and navy, and the necessities of other branches of the public service, seemed likely to effect the object with so little public inconvenience."

While considering banking and currency problems reference may be made at this point to the creation of the national banking system. In his report to Congress made in December 1861, Secretary Chase strongly recommended as an alternative to the plan of issuing legal tender notes, the plan of issuing "to institutions and associations, notes prepared for circulation under national direction, and to be secured as to prompt convertibility into coin by the pledge of United States bonds and by other needful regulations." The purpose was twofold. "To give to the people uniformity in currency; uni-

formity in security; of effectual safeguards, if effectual safeguard is possible, against depreciation; and of protection from losses in discounts and exchanges," and secondly, the correlative advantage to the Government of "increased facilities for obtaining the loans required by the war." This plan was developed into the national banking system which was authorized by Congress in 1863.

Another method of war financing by borrowing operations was the receipt by the Treasury Department of special deposits upon which a moderate interest, usually 5%, was allowed.

The two great war loans were the three-year notes bearing interest at the rate of two cents a day on each one hundred dollars—the "Seven-Thirties" as they were called, and the six per cent bonds redeemable after five years and payable in twenty years from date, popularly known as "Five-Twenties." They were payable principal and interest in coin, while the "Seven-Thirties" were payable in currency. The latter were convertible at the pleasure of the holder into the "Five-Twenties."

Secretary Chase in his financing kept four objects in view: "(1) moderate interest; (2) general distribution; (3) future controllability; and (4) incidental utility."

In his endeavor to accomplish these objects he made the mistake of issuing too many obligations of very short maturity, and at times he defeated his efforts at distribution by offering too low a rate of interest. He admitted that his best success had come when he had used the facilities afforded by a financial agent to whom a reasonable commission was paid for the services of himself and associates.

The war ended in April, 1865, but the debt did not reach its maximum until August, when it stood at $2,844,649,626.

The cash in the Treasury at that time was \$88,218,055, making the net debt \$2,756,431,571. Of the gross debt, \$2,381,-530,294 bore interest at an average rate in excess of 6%; on \$1,503,020 interest had ceased and \$461,616,311 was non-interest bearing debt—the United States notes.

The total cost of the war, taking the period from June 30, 1861, to June 30, 1866, because all the war bills could not have been liquidated much before that date, may be closely estimated at \$3,500,000,000. This figure is arrived at by making an allowance for normal peace disbursements and receipts, and for cash in the Treasury at the end of the period. Of this amount about one billion may be said to have come from revenue and the remaining two and a half billion from borrowing —say about in the proportion of 30% revenue and 70% loans.

The revenue receipts really only became an important factor toward the end of the war. Prior to the war the Government had derived its revenue for years almost entirely from customs duties. There had been no internal revenue from any source and in the years just before the war the income from the sales of public lands had been relatively unimportant. The total revenue receipts in the fiscal year 1862 were only \$51,919,000 against disbursements of \$469,570,000 or only about 11%; in 1863 the revenue receipts were \$112,-094,000 as against disbursements of \$718,734,000, say 15.6%; in 1864 \$243,412,000 against \$864,969,000 or 28%. In 1865 the disbursements reached the very heavy total of \$1,295,-099,000. The revenue receipts were quite substantial, \$322,031,000, but they reached only 24.86% of the total.

In 1866 the direct war expenses were over and therefore the disbursements declined to the relatively small total of \$519,022,000 while the receipts were \$519,949,564.

The cost of the war was undoubtedly substantially in-

creased because of the resort to the issue of legal tender notes in such large volume. How great a part of the rise in prices should be attributed to this cause it is difficult to determine. The greatest depreciation occurred in 1864. On July 1st of that year a paper dollar was worth only 38.7 cents. The average gold value of United States notes for the four years of the war was 67.5 cents. The average value for 1864 was 49.2 cents. In 1865, the year of the greatest disbursements, this average value was 63.6 cents.

If we apply these figures to the borrowings of these years it will be noted that while the Treasury was nominally borrowing its long-time money in 1864 at 6%, it was actually paying over 12% and in 1865 the actual cost of nominal 6% money was fully a third higher, or 8%. It would be interesting to pursue this matter further, but such a study is one for the economist rather than for the chronicler of the story of our public debt.

Chapter VII

Liquidating the War Debt

THE sudden cessation of hostilities; the return of a great army of men to the pursuits of peace; the adjustment of business to a class of conditions essentially different from those prevailing before the war and during the war, involved many sacrifices. The speculative fever raised by the war subsided but slowly, and was followed by much distress and a period of reaction which tried men's souls perhaps more effectually than the dreadful, but exciting, war times.

The great expansion of the currency from a bank circulation estimated at about two hundred million dollars and specie two hundred and forty-eight million ($13.85 per capita) in 1861, to a bank and treasury circulation of seven hundred and fifteen million dollars, in 1865, practically all paper ($20.58 per capita), accompanied by a suspension of specie payments. wrought a vast change in the business methods of the country. Industry, in all its phases, had been wonderfully stimulated, Fortunes were quickly made, quickly lost. Speculation, gambling, belief in luck were the order of the hour. The whole country was exhilarated.

When the war stopped manufactures of military supplies of all kinds suddenly ceased. The commercial activity aroused by the war sought new fields, and found them in great schemes for developing the country.

Capital poured into all forms of fixed investment.

The railroad to the Pacific was rapidly built, aided by the Government as the project was, by liberal land subsidies and the loan of 6% United States bonds to an aggregate of $64,623,512. The railroad systems of the entire country were extended—increasing successively at the rate of one, two, three, five, six, seven thousand miles a year.

Cities and towns were founded, manufacturing plants constructed and put in operation, mines developed. Immense sums were spent in developing our agricultural resources.

The industrial development had proceeded so rapidly that it soon began to be apparent that improvements had been made and products created in advance of the needs of the country and its ability to carry them. The spectre of repudiation spread its wings over the land and for a time even the good name of the nation was in jeopardy—a proposition being made to pay the bonds in greenbacks.

Although it was foreseen that the country must inevitably pass through a period of financial distress and that there must be a liquidation and readjustment of private and corporate burdens which would involve great losses, yet there were enough men with clear vision who had the wisdom, the courage and the honesty to fight the repudiating spirit to the death. A strong fight was carried on in and out of Congress which resulted in the passage of the Public Credit Act, which act stated that it was the purpose of the Government to discharge all just obligations to the public creditors in coin or its equivalent, except in cases where the law authorizing the issue of any such obligation had expressly provided that the same might be paid in lawful money or other currency than gold or silver.

The effect of the passage of this act was to completely reassure the creditors of the nation.

From this time on to 1879, when specie payments were resumed, there was a gradual increase in the gold value of the legal tender notes and also a gradual fall in the nominal rate of interest paid on the Government's loans. As a result, the actual rate of interest paid on United States bonds in 1869 was about 7¾%, in 1870 about 6¾%, in 1871 to 1876, in-inclusive, around 6⅜%. In 1877 there was a decided improvement to around 5¾%—the average interest paid falling to about 5½% and the gold value of the notes rising to 95.4%. Notes and gold were practically at par in 1878.

However, the true criterion of the Government's credit is not the average rate which was paid on all bonds outstanding but the interest basis upon which new loans could be placed from time to time, that is, the market valuation. This is developed in the following pages.

The credit of the Government could not but improve because, immediately the war was over, debt payment on a large scale began.

As a matter of fact the taxes which had been imposed for the purpose of raising revenues for the prosecution of the war only began to be largely effective after hostilities had ceased. In 1866 the total ordinary receipts, that is, exclusive of postal revenues and borrowed money, were $519,949,000; in 1867 they were $462,846,000. Then for several years the receipts ranged around $370,000,000. From 1866 to 1893, inclusive, there was but one year in which the ordinary receipts of the Government did not largely exceed disbursements, including postal deficits, interest and pensions. The Government thus was put in a position to largely reduce its debt and to take steps to set its house in order financially. The decrease in the net debt at the end of the fiscal year 1866 compared with the maximum of August 31, 1865, was $120,395,408. The de-

crease in the fiscal year 1867 was $127,884,952; in 1868, $27,297,798; in 1869, $48,081,540; in 1870, $101,601,917; in 1871, $84,175,888; in 1872, $97,213,538; and in 1873, $44,318,470. Even in the fiscal year 1874, which included the period of the 1873 financial crisis, the net debt decreased $1,312,907. In fact there was not a single year from 1865 to 1893, that the debt less cash in the treasury, that is the net debt, did not decrease.

In addition to bonds and short-time obligations redeemed or bought with surplus revenues there were paid off up to and including the fiscal year 1880, through refunding operations, $1,395,347,800 bonds bearing interest at the rate of 5% and 6%. For this purpose there were sold at par in coin $500,000,000 5's, $185,000,000 4½'s and $710,345,950 4's.

From a maximum actual interest basis of 15½% during the height of the war in 1864 the credit of the government steadily improved until by 1879 it was on a 4% basis and in 1880 on a 3¼% basis.

On the first day of January, 1879, specie payments were resumed. In preparation therefor, the Secretary of the Treasury, in addition to some $30,000,000 in gold accumulated from customs receipts, had in hand $96,000,000 obtained through the sale of $95,500,000 4½% and 4% bonds issued under the terms of the Act approved January 14, 1875, known as the Resumption Act. In time this fund came to be known as the "gold reserve," and in the bank act approved July 12, 1882, in a section providing for the issue of gold certificates, the sum of $100,000,000 was prescribed by Congress as the limit to which the gold reserve might be reduced without affecting the issue of gold certificates. Subsequently, under the terms of the Acts of March 14th, 1900 and May 30th, 1908, the reserve was raised to $152,977,036, at which amount it has

since been maintained. The Secretary of the Treasury was required by the Act of March 14th, 1900, to maintain the parity of all forms of money issued or coined by the United States with the gold dollar, which is declared the standard unit of value. The act, however, gave no specific authority to sell bonds for the purpose of maintaining this parity provision. Under the terms of the Federal Reserve Act this provision of the Act of March 14th, 1900, is reaffirmed, and the Secretary of the Treasury is given authority for this purpose to borrow gold on the security of United States bonds authorized under this act or in exchange for one-year gold notes bearing interest at a rate not to exceed three per cent per annum; or to sell the same if necessary to obtain gold.

In 1881 the Government had the right to redeem $671,916,000 6's and 5's. A refunding bill was passed by Congress but was vetoed by President Hayes because of provisions incorporated therein which were manifestly unfair to the national banks.

Secretary of the Treasury Windom then offered the bondholders the privilege of "continuing" their bonds during the pleasure of the Government with interest at 3½%. No fixed date of payment was set. This privilege was accepted by the holders of $178,055,150 6's and of $401,504,900 5's; or, in all by the holders of $579,560,050 bonds. This operation was a brilliant success. The saving of interest was on the basis of $10,500,000 annually, while the cost to the Government was less than $10,500. The income of the Government continued to be so large, however, that in September, 1881, the Treasury began to pay off the "continued" 3½'s. By the close of 1883 these bonds had all been retired, partly by cash payments and partly by conversion of $305,581,250 into 3's under the

terms of an act of Congress passed July 12, 1882. The 3's were in turn all paid off by the close of 1887.

Having retired all bonds which it had the right to call for payment the Government was then forced to go into the open market and buy bonds as the only way of releasing for the uses of business its large surplus revenues. The sum of over $56,000,000 was expended in premiums during the next four years and over $360,000,000 bonds bought and cancelled.

In 1891 the 4½% bonds became redeemable and during that year and the two years following were all retired, excepting the amount of $25,364,500 which the holders were permitted to "continue" at 2% interest. On July 1, 1893, the debt, less cash in the Treasury, amounted to only $838,969,475, or less than one-third of the maximum outstanding in 1865. The reduction of the debt ceased in 1893. After that year there were some moderate increases, which will be hereafter referred to, and then the debt became practically stationary until we became involved in the war with Germany.

Chapter VIII

Fighting "Gresham's Law"

IT has been a misfortune in connection with our national financing that from the beginning of our history the requirements of the Treasury have been confused with other issues.

From the day of Hamilton until the present customs tariffs have been laid with the double object in view of obtaining revenue and of affording a greater or lesser degree of "protection" to manufacturing industries.

The currency has perpetually been in politics. The "fathers" had so recently experienced the suffering and loss incident to the use of an inconvertible paper currency that they placed in the Constitution a provision that "no State shall . . . emit bills of credit" or "make anything but gold and silver coin a tender for debt." So far as the Federal Government is concerned, while the Constitution contains no express prohibition against the use of paper money, there is no authority given for its issue. The reports of the debate in the Convention show that there was an unanimity of feeling against the exercise of any such authority.

Until the outbreak of the Civil War the issuing of circulating notes had been left to the banks exclusively. Unfortunately the prohibition against such issues by the States was construed not to forbid the issuance of notes by State chartered banks.

This brought the State banks into competition with the United States banks and finally, in Jackson's administration to the complete triumph of the State banking idea over the central or national banking plan. The losses and inconveniences involved in dealing with the State banks brought about, in 1846, the introduction of the Independent Treasury system, by which system the receipt, custody and disbursement of the moneys of the Government were handled absolutely by the Treasury itself.

The unsatisfactory character of the circulating medium supplied by the State banks was one of the principal reasons assigned in 1861 for authorizing the issuance of legal tender notes by the Federal Government and in 1863 for the organization of the national banks.

In 1878 Congress passed an act restoring to the silver dollar its full legal tender character and authorizing the Secretary of the Treasury to purchase silver bullion at the market price, not less than $2,000,000 nor more than $4,000,000 worth per month and to coin the same into dollars. Provision was made also for the issuance of silver certificates upon deposit of silver dollars. While these certificates were not made a legal tender, they were made receivable for customs, taxes and all public dues and when so received might be reissued.

This was clearly not primarily a currency measure but, as its advocates frankly admitted, was intended to make a special market for a home product which was rapidly deteriorating in market value.

In 1879 specie payments were resumed under the terms of the Act of January 14, 1875, which provided for the accumulation of a gold reserve and which provided that the Treasury should "redeem in coin the United States legal tender notes then outstanding, on their presentation for redemption." It

also provided, however, that when redeemed the notes should not be cancelled but should be reissued. It must be born in mind that "coin" at that time was gold coin, silver having been demonetized in 1873.

The result of the silver purchase legislation was to add an increasing amount to the volume of paper which must be maintained at par with gold.

The large Treasury surpluses which obtained until 1892, inclusive, made this comparatively easy, especially so in view of the fact that the rapid retirement of United States bonds by redemption and by purchase in the market at high premiums made it an object for the national banks to retire their circulation, in order to take the profit on their bonds.

Thus while the circulation of silver certificates had by June 30, 1892, reached the large sum of $326,880,000, the circulation of national bank notes fell off from a maximum of $356,399,000 on March 31, 1882, to $167,306,000 on June 30, 1892.

Nevertheless the total circulation of all kinds increased from $729,132,634 or $15.32 per capita, on June 30th, 1878, the year before the silver purchase act went into effect, to $1,601,347,187 or $24.60 per capita on June 30th, 1892.

The problem of the Treasury was greatly aggravated in 1890 by the enactment on July 14th of a law, in place of the 1878 legislation, requiring the Secretary to purchase monthly 4,500,000 ounces of silver bullion and to pay for the same in legal tender notes. This act contained a direction to the Secretary of the Treasury, "under such regulations as he may prescribe, to redeem such notes in gold or silver coin, at his discretion, it being the established policy of the United States to maintain the two metals on a parity with each other upon the present legal ratio or such ratio as may be provided by

law." This was known as the "Sherman Act." Thus the dangers of silver paper inflation were doubled.

The large Treasury surpluses prevailing until well into the fiscal year of 1892-1893, coupled with the fact that for the greater part of that time the balance of trade ran in the favor of the United States, prevented any serious depletion of the gold reserve until just prior to the panic of 1893. For about a year prior to that date the reserve had been tending downward and it was with the utmost difficulty that Secretary Folger succeeded in maintaining the amount slightly above the accepted minimum of $100,000,000.

The second Cleveland administration found an empty and almost bankrupt treasury.

Secretary Carlisle reported to Congress on December 19, 1893, that the actual net balance in the Treasury after deducting trust funds, disbursing officers' balances and the gold reserve was only $11,038,448 and that of the total amount held $12,347,517 was in subsidiary silver and minor coins. The surplus had been effectually dissipated by the Harrison administration.

It is no wonder that the credit of the Government was at low ebb. President Cleveland and his Congress were entirely out of accord on the currency question. Congress was persuaded to repeal the silver purchase act, but more than this it would not do, although the Secretary pointed out that notwithstanding extraordinary efforts to maintain the reserve it was persistently declining. By January, 1894 the reserve was down to $69,747,000.

By taking advantage of an old law upon the statute books the Secretary was able to find authority to issue bonds to replenish the Treasury and to maintain the reserve. Fifty million dollars of 5% bonds were sold at 117.223%—equal

to a 3% bond at par. Even though some members of Congress tried to prevent the issue of these bonds by questioning their legality, they were successfully sold, but only after the Secretary had put his pride in his pocket and personally asked the bankers to get together and take $43,000,000 of them, $7,000,000 being all for which the general public had subscribed. The reserve was made good for a few months but by August it had again fallen, this time to $52,189,000.

Although the balance of trade was largely in our favor, gold was going out of the country rapidly. Foreigners were withdrawing their investments. The Secretary obtained $15,000,000 in gold from the banks in exchange for legal tender notes. This helped very little, so in November another $50,000,000 5% bonds were placed in exchange for gold coin, again with the banks of New York City. This gold disappeared as quickly as the previous instalment, so that by February the reserve dropped to $40,000,000. It was commonly expected that the Treasury would suspend in a few days.

Just at this juncture the President succeeded in arranging with a group of American and foreign bankers, headed by J. P. Morgan & Co., to provide the Treasury with 3,500,000 ounces of gold coin, equal to $65,117,000, in exchange for 4% bonds maturing in 1925. This was equivalent to a sale of the bonds at 104.49%, a 3¾% basis of income.

In connection with the previous sales there had been a lack of a nice sense of business ethics on the part of some of the banks, for they had withdrawn gold from the Treasury to the extent of $24,000,000 in order to complete their payments. The Morgan syndicate agreed that they would exert all financial influence and make all legitimate effort to protect the Treasury of the United States against the withdrawals of

gold pending the complete performance of the contract. The bond deliveries were to be made *pari passu* with the payments. The terms of the contract allowed six months for its performance. This meant that the Treasury had the support of the syndicate for that period of time.

The bond syndicate succeeded in protecting the Treasury during the term of their contract and they even contributed $20,000,000 more in gold in exchange for legal tender notes, after their contract had expired.

There were no further large withdrawals of gold until after President Cleveland sent to Congress his Venezuelan message in December, 1895. By the 6th of January following, the reserve was down to $61,251,000. It was therefore deemed advisable to sell another $100,000,000 4s of 1925. These were offered for public subscription at 111.166%.

As Horace White said in an address delivered at Omaha before the National Currency Convention in April, 1898:— "if the trouble had been merely a shortage of revenue, Congress would have applied the remedy promptly. It was precisely because the currency question, and the standard of value, and party interests were involved in it that the members of Congress would do nothing except embarrass the Executive, bandy words with each other, and let the Treasury go to smash."

The fight for the integrity of the currency and for the preservation of the credit of the Government was won. The bonds which were issued were in amount more than sufficient, if they had been so applied, to retire every dollar of the greenbacks and yet they are still outstanding and $118,489,900 of the Fours of 1925 issued in 1895 are still drawing interest from present-day taxpayers.

In 1897 President Cleveland, after courageously holding

the situation for four years against a soft-money Congress, surrendered the reins of office to President McKinley who with his Congress was elected on a sound-money platform. The country had had its fill of the soft-money shibboleth.

To complete the record it may be noted that in 1900 Congress clearly defined the policy of the country in regard to the currency for all future time by passing what may be called the new "public credit act." This act unequivocally and irretrievably commits the country to the payment of all forms of Government paper in gold coin or its equivalent.

Chapter IX

The Spanish War

At the time of the declaration of war with Spain the finances of the Government were in excellent condition and the taxing machinery was in good working operation. Congress for the first time planned for war expenses on a really scientific basis by providing for an adequate scheme of taxation in connection with an issue of bonds. As far as taxes were concerned, reliance was placed almost wholly upon new internal revenue duties. For the first time a Federal tax was laid on legacies. An issue of $200,000,000 3% ten-twenty year bonds was authorized. These bonds were sold at par and almost immediately thereafter were quoted at a premium.

Upon the cessation of the war with Spain the Government found itself embarrassed by large surplus revenues and the process of debt paying began again. As there were no bonds subject to call, it was necessary for the Secretary of the Treasury to endeavor to buy bonds. He therefore in November, 1899, offered to purchase $25,000,000 4s of 1907 or 5s of 1904, but succeeded in obtaining something less than $20,000,000 bonds.

The Two Per Cent Consols

In 1900, upon the advice of Secretary Gage, Congress passed an act providing for the refunding of the Threes, the

Fours of 1907, and the Fives, into new 2% thirty-year gold bonds. This was the first issue of bonds to be specifically made payable in gold coin. This refunding operation was a brilliant success, rivaling the achievement of Secretary Windom in "continuing" in 1882 the maturing 5% and 6% bonds at three and one-half per cent. as already described. All told there were some $900,000,000 bonds which were convertible under the law. Of this amount $445,900,000 bonds were converted up to January 1, 1901, at which time the Secretary of the Treasury, acting under the authority theretofore given him by Congress, declined to permit further exchanges, desiring to reserve the remainder of the bonds maturing in 1904, 1907 and 1908 for the requirements of the sinking fund.

However, in 1903, refunding operations were resumed and about $97,000,000 more bonds converted. In 1905, some $53,000,000 bonds were converted, and upwards of $50,000,000 in 1907. The total conversions amounted to $646,250,150 at an estimated net saving to the Government on interest account of $16,551,037.

The Panama Canal

By the Act of June 28, 1902, and the Act of August 5, 1909, Congress authorized the issuance of 2% and 3% bonds for an amount not to exceed $375,200,980 to reimburse the Treasury for expenditures incurred and to be incurred in the construction of the Panama Canal.

Under these acts $84,631,980 bonds were issued bearing 2% interest and $50,000,000 bonds were issued bearing 3% interest. The total cost of the Canal up to June 30, 1918, was $439,809,601. By the Act of September 24, 1917, as amended, Congress authorized an issue of $225,000,000 bonds in lieu of

the unissued Panama Canal bonds, and this amount was included in the general authority for the issue of Liberty bonds.

There were no other important transactions in connection with the history of the public debt until the time came for the active participation of the country in the world war just ended.

It may be noted, for the sake of the record, that in 1910 provision was made for funding postal savings deposits into 2½% Postal-Savings bonds. These bonds are described on a subsequent page.

In the legislation authorizing the Federal Reserve System provision was made for gradually refunding the Two per cent. Consols and the Panama Canal Twos, most of which are held by the national banks, into bonds and certificates without the circulation privilege bearing three per cent. interest. No important transactions have as yet taken place as a result of this legislation. In justice to the national banks, in view of the entirely new conditions brought about by the present war, some further remedial legislation will probably be required in connection with these bonds.

On April 1st, 1917, the net public debt of the United States was $1,207,827,886, a per capita debt of $11.59, and a net reduction from the maximum at the close of the Civil War of $1,548,603,685.

Chapter X

The Great War

IF an able finance minister, foreseeing the outbreak of a great war in which the country might be involved, had made thorough plans to cope with the problems which such a war must bring, he could not have adopted better financial measures than those which by a process of evolution were actually in force on the fateful August 4, 1914.

The Federal Reserve System, co-ordinating the banking resources of the country and stabilizing the currency, had just gone into operation, corporation taxes had become a feature of our fiscal system since 1910, the income tax had been approved in principle and actual collections of revenue therefrom had begun.

Therefore when in 1917 war became inevitable it was only necessary to speed up actually existing fiscal machinery. No time was lost in devising entirely new methods of taxation. There was no necessity or excuse, as there had been at the outbreak of the Civil War, for questionable currency methods because the existing system was impossible. It was unnecessary to beg the banks reluctantly to make wholly inadequate preliminary advances, as Secretary Chase had been compelled to do.

With the experience of the past as a guide, it was possible to devise a simple, scientific method of borrowing, a method which quickly gave the Government the moneys required by

the use of one kind of paper, and then funded these advances into bonds bearing a moderate rate of interest and so adjusted as to maturity dates as to permit of refunding at lower rates, or of repayment as soon as conditions would allow, without the necessity of going into the market and paying large premiums.

A distinguishing feature of the financing of the present war has been the emphasis which has been put upon thrift. The doctrine of conservation of "goods and services" has been preached from one end of the land to the other. The effort has been to obtain the resources for the conduct of the war without placing an undue strain upon the banking facilities of the country. This effort has succeeded to a remarkable degree.

The indications are that by the end of the present fiscal year the disbursements of the Government for the expenses of the war will have reached upwards of thirty billion dollars and that of this great amount about 20% will have been raised from taxation, besides raising from taxation an additional $2,000,000,000 to cover the normal budget. Of the remaining 80% of the war expenditure, assuming the undoubted success of the Victory Loan, substantially all should be in funded form and it may reasonably be expected that the greater part of this amount will be fully paid for and put away in the safe keeping boxes of some twenty million or more citizens of our great republic.

The method of public debt financing which the Treasury has so successfully used since our active participation in the war began in April, 1917, may be briefly described as follows. In anticipation of the receipt of the proceeds of Liberty Loans the Treasury has issued Certificates of Indebtedness. These certificates have first been apportioned to

the twelve Federal Reserve districts and then to the banks in each district in the ratio which the assets of each group and of each bank in a group bore respectively to the entire banking assets of the country and of the group. While it has not been compulsory upon each bank to accept its allotment, yet as a rule the banks have cheerfully accepted the proportion allotted them.

These certificates have borne rates of interest varying from 3% to 4½%, but for some months past 4½% has been the accepted rate.

The certificates have been issued from time to time as the exigencies of the Treasury required. Then, when the time seemed suitable for the issuance of a permanent loan, the advances of the banks have been repaid from the proceeds of such loan.

The reports of the Treasury Department show that $868,205,000 certificates were issued in anticipation of the first loan; $2,320,493,000 in anticipation of the second loan; $3,012,085,500 in anticipation of the third loan and $4,659,820,000 in anticipation of the fourth loan. The amount of certificates which will have been issued in anticipation of the Victory Liberty Loan up to April 21st will probably be about $5,000,000,000.

It will be noted that the Treasury by certificate issues anticipated the income from the first loan by 43.41%, from the second by 60.92%, from the third by 72.12% and from the fourth by 66.63%.

Another class of certificates which the Treasury has issued has been made in anticipation of the revenue from internal revenue taxes. In addition there have been some issues to tide over special emergencies. These special emergency certificates have carried only a nominal 2% interest.

The success of the permanent, or Liberty Bond, financing is a matter of common record. The grand total of the four loans issued was $16,978,356,250. According to official estimates, these bonds have been distributed among upwards of twenty million subscribers. Then there have been the sales of War Savings and Thrift Stamps aggregating well over a billion dollars.

The permanent addition to the public debt because of the late war, after the Victory Loan financing has been completed, will probably closely approximate $25,000,000,000, and while it is not expected that there will be necessity for any more Liberty Bond campaigns, it is quite likely that the Treasury may need to borrow from the banks toward the end of the year and during 1920 some further substantial amounts before the maximum is reached.

It should be carefully borne in mind that against this great increase of debt the Treasury will hold some $10,000,000,000 of interest-bearing bonds of foreign nations, most, if not all, of which will eventually be paid. However, the actual net war burden which the American people will have to liquidate will be between fifteen and twenty billion dollars, or from $140 to $187 per capita. At the close of the Civil War the per capita burden was over $79.

Considering the development in the resources of the nation which has taken place since 1865, the burden of debt ought not to be more difficult to cope with now than it was in that instance.

The traditional dislike of the nation to being in debt and the rapid progress made in debt reduction after every other great crisis in the history of the country will undoubtedly characterize the course of events following the present crisis.

It looks very much as if history would repeat itself and

taxes flow into the Treasury in such volume as to permit of an early resumption of debt paying.

Those who have bought bonds from patriotic motives will unquestionably be rewarded for so doing in hard dollars and cents profits, should they wish to realize upon their bonds prior to maturity. The present market return of nearly five per cent from an investment in United States Liberty Bonds will fade away as did the big returns from similar investments after the Civil War. After that war 7 3/10% gave away to 6%, then to 5%, 4½%, 4%. No sooner was the debt upon a four per cent basis than the market rate became 3½%, then 3% and finally before the turn came the Government credit rose to a two per cent basis. Patriotism was certainly wonderfully rewarded. The same relative enhancement in market value and of rapid debt reduction happened following the funding of the Revolutionary Debt, after the War of 1812 and after the Mexican War.

It will not be many years before the United States will be again out of debt and in the interval the fortunate holders of the country's bonds will reap a bountiful harvest. This time, it is a pleasure to know that those to be benefited will be the people at large, for there is scarcely a family to-day which does not own at least one Liberty Bond.

The people of the United States may well be proud of the debt paying record of their Government. While assisted by the fact of the great resources of a new country, the achievements of the past would not have been possible had not the financial foundation been well laid in the beginning of our history and a strong sense of public honor ever afterward maintained.

Mistakes, many of them of a serious nature, have been made in the gradual evolution of our financial system, but,

learning by our mistakes, we have finally developed a fiscal system which while not yet perfect has shown its ability to carry the nation safely and comfortably through the strain of the greatest war in history.

We can well be proud of the achievements of the past and look forward confidently to a future which may be expected to bring with it equally great achievements. Let us hope that the resort to the use of the public credit in the future may not again be required for the conduct of war, but, if at all, for the development of conditions which will make life better worth living and for the maintenance of a just and permanent peace among the peoples of the earth.

Part II—Descriptive

Chapter I

Some Comparative Data

PRIOR to the war the debt of the United States amounted in round figures to $1,000,000,000. Since the beginning of the war the debt has increased in the sum of about $23,000,000,000, so that the debt to-day is about twenty-four times the amount at which it stood before we began to take an active part in the world war about two years ago. We may assume, when adjustments and settlements have all been made, that the maximum debt for the present war may reach about $30,000,000,000. However, against this total should be placed an asset of around ten billion dollars of interest-bearing obligations of foreign governments representing some eight and a half billion of loans made to our Allies during the progress of the war, together with another contemplated billion and a half of similar loans. It may be expected that in the process of time these loans will be repaid and, as the law under which they were made expressly stipulates that repayments shall be applied to the liquidation of a corresponding amount of national indebtedness, we may expect eventually that this large portion of our indebtedness will be paid without it being necessary to call upon the tax payers for a contribution in any form either on account of principal or interest.

The Debt at Former Critical Periods

The other periods in the history of the country at which the debt stood at a maximum amount were on August 31, 1865, shortly after the close of the Civil War, when the total debt was $2,844,649,616; in 1851, after the Mexican War and the payment of the Texas indemnity, when it amounted to $68,304,796; on December 31, 1815, when all the bills for the War of 1812 had been settled, when it was $127,041,341, and on April 1, 1791, for which date, after all adjustments of the Revolutionary debts had been made, the debt was found to be $76,781,953.

Reduced to a per capita basis the Revolutionary War debt amounted to $18.88; that after the War of 1812 to $14.64; that at the close of the Mexican War to $2.84; that at the close of the Civil War to $81.58, while at present it is $224.30 and, if the estimated maximum for the late war is reached, will be about $280.

The Debt and the National Wealth

The national wealth of the United States to-day is somewhere around three hundred billion dollars, so that the present debt is about eight per cent. of the wealth of the country and if it reaches its estimated maximum will be about ten per cent. of the national wealth.

The Sinking Fund Will Retire Debt in Twenty-Five Years

In order to retire the principal of the debt incurred in the prosecution of the war, Congress has made an appropriation for an annual sinking fund, beginning in 1920, equal to the

sum of (1) 2½ per cent. of the aggregate amount of bonds and notes issued under any of the Liberty Bond Acts, less an amount equal to the par amount of any obligations of foreign governments held by the United States on July 1, 1920, plus (2) the interest which would have been payable upon the bonds and notes held in the sinking fund. The period required to liquidate the debt by this arrangement is estimated at twenty-five years. The specific appropriation called for by this act, in addition to that for the interest charge, will be in the neighborhood of $500,000,000.

The Interest Charge and the National Income

The national income of the United States at this time may be conservatively estimated at over sixty billion dollars. To meet the present interest charge of approximately one billion dollars calls for about $1.66 from each $100 of income and to meet the estimated maximum interest charge for thirty billion of debt, say $1,250,000,000, would require about $2.00 out of every $100 of income.

The gross interest and sinking fund charge would thus be $1,750,000,000,—$16.37 per capita; about $3 out of every $100 of national income. Assuming, however, that the interest on an amount of debt equivalent to the loans to foreign governments will be met by the payments from such governments and that the principal of an amount of debt equal to such loans will be finally liquidated by the payment thereof, then the actual charge against the American people for the payment of interest and the liquidation of debt within twenty-five years will be only $1,300,000,000 a year;—a per capita charge of $12.15 or say $2.17 for every $100 of national income.

The Debt Compared With Debts of Other Nations

It will now be interesting to note how the debts and resources of the other great nations of the world compare with those of the United States. According to the latest statistics available, the national debt of Great Britain now amounts to over $36,000,000,000 of which approximately $33,000,000,000 has been incurred since the beginning of the war on August 4, 1914. On a per capita basis the debt would amount to, say, $782.60. The national wealth of Great Britain is estimated by competent authorities at $120,000,000,000 and the national income at $15,500,000,000. The proportion of debt to wealth therefore would be 30% and, assuming the interest charge to be about $1,575,000,000, it would require to meet it about $10.16 out of every $100 of income. It should be noted here that it is estimated Great Britain will be reimbursed by her Allies and Dominions to the extent of about $5,000,000,000 for advances made to them during the progress of the war. Assuming this to occur, the burden of debt to be borne by her own people would be reduced to $674 per capita, calling for a contribution of $8.70 a year from every one hundred dollars of income in order to meet the interest charge.

The figures available for France, Italy and Germany are not as reliable as those for Great Britain and for our own country, but a close approximation would give the gross debt of France as about $36,000,000,000 and the per capita debt $900; the gross debt of Italy as about $12,600,000,000 and the per capita debt $350; the gross debt of Germany, $39,000,000,000, and the per capita debt about $600.

While all figures for national wealth and national income are necessarily estimates and of no great scientific value, the accepted figures for France, Italy and Germany are especially

indeterminate. However, they probably roughly approximate the facts and, with the above reservation, may be used for comparative purposes.

The national wealth of France was estimated before the war at $62,000,000,000 and the national income at perhaps $7,500,000,000. The wealth of Italy prior to the war may be taken at $25,000,000,000, while the national income was perhaps $4,500,000,000.

For the German Empire before the war, the wealth was estimated at upwards of $80,000,000,000 and the income at around $10,000,000,000. An official estimate of recent date gives the cost of the war at 161 billion marks. At the par of exchange this is, say, thirty-nine billion dollars, the figure at which we have estimated the debt, for it is well known that no part of Germany's war expenses has been met from taxation, not even all the interest upon her debt. The amount required for the interest charge is probably about two billion dollars. As the statistics for wealth and income so far given for these countries are in the terms of the pre-war money status, we really ought to advance the valuations materially in order to adjust them to the same basis of inflated values as that upon which the debts have been incurred.

Just what adjustments should be made it is difficult to determine. In the case of our own country the estimate of national income which we have used is based on present-day conditions and we believe closely approximates the real facts. The usual estimate of national wealth of $250,000,000,000 we believe to be too low. A ratio of 20% of income to wealth would undoubtedly more nearly reflect the true status. This would make the national wealth in present-day values $300,000,000,000, the figure which we have adopted.

The figures used for Great Britain are estimates recently

published by Edgar Crammond, a noted English writer on economic topics.

Corresponding adjustments for the wealth and income of the Continental nations with which we are making comparisons enable us to arrive at the results given in the following tables.

These adjustments have not been made arbitrarily. In each case conditions peculiar to each nation have been carefully considered. We have not overlooked the losses which each of these nations has suffered as a result of the conflict from which they are emerging.

In the case of France we have considered the losses due to the war, but against these we have thought it fair to place a liberal estimate for the wealth and income of Alsace-Lorraine now again to be incorporated in the nation. A corresponding reduction has been made in considering the population, wealth and income of Germany.

With these prefatory remarks the tables are submitted. They will repay careful study.

DEBT AND INTEREST CHARGE COMPARED WITH ESTIMATED WEALTH AND INCOME OF THE PRINCIPAL BELLIGERENTS IN THE LATE WAR

Approximate status as of April 1, 1919

Nation	Debt	Wealth	Debt % Wealth	Interest	Income	Interest % Income
United States . . .	$24	$300	8.00	$1.000	$60.0	1.66
Great Britain . . .	36	120	30.00	1.575	15.5	10.16
France.	36	90	40.00	1.800	12.0	15.00
Italy	12.6	40	31.50	.548	7.5	7.30
Germany	39	80	48.75	1.950	10.0	19.50

(Debt, wealth, interest and income in billions.)

DEBTS AND INTEREST CHARGE COMPARED WITH ESTIMATED WEALTH AND INCOME OF THE PRINCIPAL BELLIGERENTS IN THE LATE WAR

PER CAPITA BASIS

Population (In millions)	Nation	Debt Per Capita	Wealth Per Capita	Interest Per Capita	Income Per Capita
107	United States. . .	$224.	$2803.	$9.34	$560.
46	Great Britain. . .	782.	2608.	34.24	337.
40	France.	900.	2250.	45.00	300.
36	Italy	350.	1111.	15.22	208.
65	Germany.	600.	1231.	30.00	154.

A quick survey of the above figures develops the fact that our debt, and the interest charge which it calls for, in comparison with our population and resources is relatively much smaller than that of any other of the large nations of the world, and that, if it had been necessary to prolong the war for a further period of months or years, we could have done so without seriously handicapping our industrial development. It is gratifying to know that the trial to which we have been compelled to submit for the purpose of cleansing the world from German autocracy has left us in a position where we are strong financially and able to do most effective work in assisting to carry through a reconstruction program which will make the world finer and better than it was at the beginning of the conflict.

Chapter II

General Information

FOR convenience we will divide the debt of the United States as it stands to-day into two parts, namely, that which was incurred prior to April 1st, 1917, which we will designate as the Old Debt, and that which was incurred subsequent to that date, which we will call the War Debt.

Payable in Gold Coin

All the outstanding bonds of the United States are by express statute under which the loans were made, or because of the general legislation covering the subject, payable in gold coin of the present standard of weight and fineness.

Market Transactions

All United States bonds are listed on the New York Stock Exchange. None of the certificates is so listed. The transactions in Liberty Bonds on the Exchange are in large volume. They are made at so many dollars and tenths of a dollar per $100. Liberty Bonds can also be bought and sold over the counter at current market prices in the bond departments of trust companies and banks, and of other large dealers.

Very few transactions take place on the Stock Exchange in the bonds of the old issues. The important transactions in these bonds invariably take place in the dealers' offices.

The quotations of these bonds are made in dollars and sixteenths of a dollar. Transactions are nearly always made at a net price and not on a commission basis.

The Certificates of Indebtedness in most cases have been placed directly with the banks through the Federal reserve banks and subsequent transactions have been between the banks and their clients.

The War Savings Certificates are not intended to be bought and sold in the market. It is the desire of the Treasury Department that they shall be sold directly to the investor by the Government agents. In case the holders find it necessary to realize upon them, they can cash the certificates at a money-order post-office. The same plan has been adopted in connection with Postal-Savings bonds which the Postal Savings Trustees stand ready to redeem at par through the post-offices.

Chapter III

The Old Debt

THE obligations which we have designated as the Old Debt may be classified under two heads.

Circulation Bonds

One group of these bonds is distinguished from the other because of the fact that the bonds in this group have what is known as the circulation privilege, that is to say they can be used by the national banks and Federal reserve banks to secure national bank notes and Federal reserve bank notes. The bonds of this group, some of them bearing interest as low as two per cent. per annum, are quoted only a little below par, notwithstanding the high rates of interest which have prevailed during the war period. This is due to the fact that out of the total issue of these bonds nearly 80% is deposited with the Treasurer of the United States to secure bank notes. At the date of the latest financial statement of the Treasury Department, that for October 31, 1918, there were outstanding $883,360,790 of the Old Debt bonds. Of these $118,489,900 were 4% bonds, $78,894,500 were 3% bonds, $11,350,760 were 2½% Postal-Savings bonds and $674,625,630 were 2% bonds. The Fours and Twos, aggregating $793,115,530, are available to secure circulating notes. The 4% bonds are redeemable on and after February 1st, 1925.

Conversion Bonds

By the terms of the Federal Reserve Act provision is made for converting the 2% bonds into what are known as Conversion 3% Bonds and One Year 3% Treasury Notes. The Act provides that after December 23rd, 1915, and at any time during the period of twenty years thereafter, the Federal reserve banks, if required to do so by the Federal Reserve Board, must buy from national banks desiring to retire their circulating notes the bonds deposited with the Treasurer of the United States to secure these notes, but such purchases must not exceed $25,000,000 par value of bonds each year. The object of this provision was to provide for the gradual retirement of the national bank notes and to substitute therefor Federal reserve notes and to liquidate the bond holdings of the banks without undue loss. The advent of the war brought about a wholly new and unexpected situation which, in justice to the banks, will probably require further remedial legislation.

Non-Interest Bearing Debt

In addition to the interest-bearing debt there was outstanding on October 31, $4,437,250 of debt which had reached maturity but which had not been presented for payment and upon which interest had ceased, and there were also outstanding $346,681,016 United States notes against which the Treasury Department held a gold reserve amounting to $152,979,025. There were also outstanding a small amount of old demand notes and the Treasury charges itself with $6,844,418 fractional currency which was issued during the Civil War and which has not yet come in for redemption.

This is after cancelling from the statement a large amount of this currency which was years ago estimated to have been lost or destroyed. The Treasury also charges itself, as a part of the non-interest-bearing debt, with moneys deposited by national banks and Federal reserve banks for the purpose of redeeming their notes in lieu of bonds which have been withdrawn. This makes the total old or non-war debt as of October 31, 1918, after deducting the gold reserve held against the United States notes, $1,130,943,651.

Postal-Savings Bonds

The Postal-Savings System was established by an Act of Congress, approved June 25, 1910, for the purpose of promoting and encouraging the habit of thrift, especially among our large foreign population, to whom the use of a Government depository for savings was familiar.

The system was popular from the start and has served its purpose well. Interest at the rate of two per cent. per annum is allowed upon savings. The depositors have the right to convert their savings into Postal-Savings Bonds, bearing interest at the rate of 2½% per annum.

At the close of the fiscal year ended June 30, 1918, there were 6,678 postal-savings depositories in operation, including 730 branch post-offices and stations. The amount on deposit was $148,471,499, belonging to 612,188 depositors. The average deposit was $242.53. The maximum amount which any depositor may have to his credit is $2,500.

To encourage small savings 10-cent savings stamps are sold which will be accepted as an interest-bearing deposit in sums of one dollar.

In pursuance of authority contained in the Postal Savings Act, $11,350,760 Postal-Savings Bonds have been issued. The first series was issued July 1, 1911, and an additional series has been issued January 1 and July 1 of each subsequent year. Postal-savings depositors desiring to convert their savings into bonds, must make application at least thirty days before the date of issue of the bonds. The applications, after receiving the approval of the Post Office Department, are forwarded to the Treasury Department and at the same time funds for the amount of the bonds to be issued are deposited in the Treasury. Thereupon the Treasury Department issues the Postal-Savings Bonds, which are United States bonds and a direct obligation of the Government. The bonds bear interest at the rate of 2½% per annum payable semi-annually on January 1 and July 1 of each year; both principal and interest are payable in United States gold coin of the present standard of value; they are redeemable after one year from date of issue and are payable 20 years from such date; they are not receivable as security for national bank or Federal reserve bank circulation. They are issued in coupon and registered form, and in denominations of $20, $100, and $500.

The Trustees of the Postal-Savings Service stand ready at any time to repurchase these bonds at par as an investment for Postal-Savings funds. The amount of bonds so purchased by the Postal-Savings Service and held as an investment on June 30, 1918, was $3,963,440. These bonds may therefore be held free from the risk of fluctuation in market value. This is a compensation for the low rate of interest which they bear.

Chapter IV

The War Debt

THE War Debt may be classified into Certificates of Indebtedness, Liberty Bonds, Victory Liberty Notes and War-Savings Certificates.

Certificates of Indebtedness

The use of Certificates of Indebtedness in connection with United States Government financing is not entirely new. As we have already seen in the historical portion of this pamphlet, certificates, or Treasury notes as they were then called, were extensively used in financing the War of 1812, in financing deficits following the panic of 1837, during and following the Mexican War in 1846 to 1851, during Buchanan's administration and during the Civil War, but the methods pursued at these times were essentially different from the method which has been pursued in connection with the use of certificates in financing the present war. The certificates which have been issued during the last two years have fallen into two classes. One class has been issued in anticipation of the sale of the long-term or Liberty Bonds, and the other class has been issued in anticipation of the payment of taxes. In each case, the certificates have automatically been cancelled either through the receipt of revenues by the Treasury from the sale of long-term bonds or by the receipt of revenues from the payment of taxes. The aggregate issues of these certifi-

cates since April, 1917, have been about $21,000,000,000. The amount of certificates outstanding on April 1, 1919, was approximately as follows: Issued in anticipation of taxes, $500,000,000; issued in anticipation of bond sales, $5,000,000,000—total of $5,500,000,000. The major part of these certificates bears interest at the rate of 4½%. The certificates now outstanding will be automatically retired within a few months by receipts from taxes or from the sale of the Victory Liberty Notes.

Liberty Bonds

There have been four issues of Liberty Bonds for an aggregate amount of $16,978,356,250. The amount of these bonds outstanding on January 31, 1919, was officially reported at $16,650,078,300. The difference in the amount allotted and amounts outstanding is probably accounted for by purchases for the sinking fund.

The subscription books for the first issue were opened on May 14, 1917, and the total subscriptions amounted to $3,035,226,850. The total number of subscribers is estimated to have been 4,500,000 and the average size of a subscription $675. It is estimated that 4.24% of the citizens of the United States subscribed to this loan. The per capita subscription was $28.63. These bonds were issued bearing an interest of 3½% and were exempt from all taxation except inheritance taxes. They carried the very valuable privilege of the right to the holder to exchange these bonds for bonds of any subsequent series bearing a higher rate of interest and issued prior to the termination of the war with Germany, the date of such termination to be fixed by a proclamation of the President. As no such proclamation has as yet been issued, bonds of this

series are still convertible into bonds bearing a higher rate of interest. According to the terms of issue they were not convertible into Treasury Certificates of Indebtedness or other short term obligations. By the terms of the Second Liberty Loan Act a short term obligation was defined to be one maturing within a period of five years. No definition of "short term obligation" was given in the First Liberty Loan Act. Presumably, however, bonds of this issue would not be convertible into the new Victory Loan notes as these are issued to mature in three to four years. The holders of the 3½% bonds have exercised their privilege of exchange for bonds bearing a higher rate of interest so that on January 31 last, the amount of bonds of this issue outstanding bearing 3½% interest was $1,413,805,200. Of bonds converted from this issue bearing 4% interest $198,865,200 were then outstanding and of those converted from this issue bearing 4¼% $376,129,100 were then outstanding.

The books for subscriptions to the Second Liberty Loan were opened on October 1, 1917, and closed October 27th. The total amount offered was $3,000,000,000 to bear interest at the rate of 4% per annum. The amount subscribed was $4,617,532,300, or 154% of the amount offered. The amount allotted was $3,088,766,150. The number of subscribers was estimated at 9,500,000, giving an average subscription of $486. The bonds were subscribed for by 8.96% of the population. The per capita subscription was $43.56. These bonds bore interest at the rate of 4% per annum but were convertible into any subsequent series of bonds (not including United States Certificates of Indebtedness, War Savings Certificates and other obligations maturing not more than five years from the issue of such obligations, respectively), bearing interest at a higher rate than four per cent. per annum, provided such

bonds should be issued before the termination of the war with Germany, the date of such termination to be fixed by a proclamation of the President. The circular under which the bonds were issued provided that such conversion privilege must be exercised, if at all, within six months after the date of issue of any such subsequent issue of bonds. According to the terms of issue this privilege of conversion, which also applied to the First Liberty Bonds which had been converted into 4's, terminated as to both of these issues on the 9th of November, 1918. By the terms of the Victory Liberty Loan Act which became a law on March 3, 1919, the Secretary of the Treasury was given authority to extend the period during which conversions might be made into 4¼% bonds and, in accordance with the authority so given, he has extended such privilege of conversion until further notice. It is manifestly to the interest of the holders of 4% bonds to make the conversion and obtain the higher rate of interest to which they are entitled. There is no disadvantage to the holder in making such exchange and the motives of no one can be impugned for so doing, because it is desired by the Government that all owners of these bonds shall exercise their rights in this matter.

The Third Liberty Loan was offered for subscription on April 6, 1918; the books closed on May 4th. These bonds bear interest at the rate of 4¼% per annum. The amount offered was $3,000,000,000. The amount subscribed and allotted was $4,176,516,850. The subscriptions amounted to 139% of the allotment. The total number of subscribers was 18,308,325, an average of $228.12 each. Over seventeen per cent. (17.22%) of the population subscribed to these bonds. The per capita subscription was $39.40.

The Fourth Liberty Loan was offered on September 28, 1918. The books closed on October 19th. The amount of-

fered was $6,000,000,000 bearing interest at the rate of 4¼% per annum. The amount subscribed and allotted was $6,993,073,250. The percentage of the amount subscribed to that offered was 116.55. It is estimated that there were 21,000,000 subscribers to this loan—giving an average subscription of $333. The percentage of subscribers to population was 19.62 or, say, equivalent on the census methods practically to one subscription for every family in the United States. This was probably the most successful war loan ever placed in this or any other country. The details in regard to the amount of Liberty Bonds now outstanding, their maturity and interest dates, denominations, opening and closing of transfer books and present conversion privileges will be found in the "Public Debt" tables printed on page 101 and following pages.

The Victory Liberty Notes

In accordance with the terms of the Act of Congress which became a law on March 3, 1919, what is stated to be the last formal Liberty Loan is to be offered on April 21st, the amount to be $4,500,000,000. These notes are to bear interest at the rate of 4¾% per annum and are to be exempt from State and local taxes, except estate and inheritance taxes, and from normal Federal income taxes. They are convertible into notes bearing 3¾% interest which are to be exempt from all Federal, State and local taxes, except estate and inheritance taxes. These issues will mature in from three to four years. They are to be interconvertible at the option of the holder and during the entire period for which they are outstanding. Both series of notes will be dated and bear interest from May 20, 1919, and will mature on May 20, 1923, but will be redeemable, at

the option of the Government, on June 15th, or December 15, 1922. Interest will be payable on December 15, 1919, and thereafter semi-annually on June 15th and December 15th and at maturity.

The Secretary of the Treasury states that in fixing the terms of the issue he has been guided largely by the desire to devise a security which will not only prove attractive to the people of the country in the first instance but the terms of which should insure a good market for the notes after the campaign is over and identical prices for the two series and should not affect injuriously the market for the existing bonds of the Liberty Loans. It is also officially stated that this will be the last Liberty Loan, but the Secretary says: "Although as the remaining war bills are presented, further borrowing must be done, I anticipate that the requirements of the Government, in excess of the amount of taxes and other income can, in view of the decreasing scale of expenditure, be readily financed by the issue of Treasury certificates from time to time as heretofore, which may be ultimately refunded by the issue of notes or bonds without the aid of another great popular campaign such as has characterized the Liberty Loans." The attractive terms upon which these notes are offered and the desire of all the people of the United States to see the financing of the war brought to a successful and honorable conclusion assures a large subscription for this issue of notes.

War-Savings Certificates and Thrift Stamps

The War-Savings Certificates are primarily intended for the convenience of the small investor. They are issued as discount certificates; that is to say, when paid at the end of the

five years which they have to run, the payment will include the return of the original investment plus an amount which will be equal to an income of about four per cent. per annum compounded quarterly.

War-Savings Certificates become an obligation of the United States when, and only when, one or more United States War-Savings Certificate stamps shall be affixed thereto. There are two series of War-Savings Certificate Stamps outstanding. One series dated in 1918 will mature January 1, 1923. These all have a maturity value of five dollars each. The second series dated in 1919 will mature January 1, 1924. These are in two denominations, one having a maturity value of five dollars each and the other a maturity value of one hundred dollars each. The issue price of the 1919 five-dollar series is $4.15 for the month of April and one cent additional for each subsequent month. Each War-Savings Certificate has places for twenty War-Savings Certificate Stamps and each of such stamps affixed thereto will have a maturity value of five dollars on January 1st, 1924, or in case of the large stamps will have a maturity value of one hundred dollars each.

War-Savings Certificate Stamps are payable at maturity at the Treasury Department in Washington, or at any money order post-office. Prior to maturity they may be cashed at any money-order post-office ten days after written demand, this office to be the office where registered in the case of a registered certificate. War-Savings Certificate Stamps of the series of 1919 will be cashed at the same price as the issue price given above and at one cent additional for each subsequent month. War-Savings Certificate Stamps of the series of 1918 are redeemable on a similar schedule. To protect the owners of War-Savings Certificate Stamps from fraud and

theft the Post Office Department has recently ruled that hereafter such stamps and thrift stamps will be redeemed only when attached to Certificates. Hereafter loose stamps will not be redeemed.

War-Savings Certificates may be registered without cost to the owners at any post-office of the first, second or third class, or at certain specially authorized post-offices of the fourth class and payment in respect of any certificate so registered will be made only at the post office where registered.

War-Savings Certificates when registered are not transferable and are payable only to the respective owners named thereon, except in the case of the death or disability of any such owner.

Not more than one thousand dollars maturity value of each series of certificates may be held by any one person, at any one time.

Thrift Cards and Thrift Stamps

United States thrift stamps having a face value of twenty-five cents and bearing no interest are purchasable at post offices and at many other agencies. They are not directly redeemable in cash but may be exchanged for War-Savings Certificate Stamps in amounts of four dollars. The owner must pay in addition to the four dollars in Thrift stamps the difference between that amount and the current issue price of War-Savings Certificate Stamps.

CHAPTER V

The Banks and United States Bonds

FOR many years the largest holders of United States bonds were the national banks. This is still true concerning the Old Debt.

The national banking system was established in 1863 primarily for the purpose of providing a market for Government bonds. With this object in view the banks were allowed to issue circulating notes upon the security of certain issues of bonds.

Circulation

There are still three issues of bonds which have the circulation privilege, viz: the 2% Consols of 1930, $599,724,050 outstanding; the Panama Canal 2's, $74,901,580 outstanding, and the 4% Loan of 1925, $118,489,000 outstanding—a total of $793,115,530 bonds, of which total on April 1, 1919, $688,183,250 were deposited to secure national bank notes and $17,411,800 to secure Federal reserve bank notes. That is, nearly 90% of these issues is held by the banks.

National banks are permitted to issue circulating notes equal in amount to the par value of the United States bonds deposited with the Treasurer of the United States. Upon the average amount of notes outstanding a tax must be paid. This tax is one-half per cent. a year in the case of the two per cent. bonds and one per cent. a year in the case of the four per cent. bonds.

National banks have the privilege of increasing or decreasing the amount of circulating notes which they have outstanding, provided the total amount at any time outstanding does not exceed the capital stock of the issuing bank. In order to retire circulation, and to regain possession of bonds deposited as security, the banks must deposit with the Treasurer of the United States an equivalent amount of legal tender currency. These deposits are covered into the Treasury and thereafter the notes are treated as part of the public debt, to be repaid upon presentation.

When the Federal Reserve System was established it was feared that the national banks would lose heavily upon their holdings of two per cent. bonds. Therefore, it was provided in the Federal Reserve Act that these bonds should be gradually retired over a period of twenty years by the purchase by the Federal reserve banks of $25,000,000 bonds annually. The Federal reserve banks have the privilege of converting the bonds so purchased, one-half into what are known as Conversion 3's, payable thirty years after date of issue, and one-half into one-year 3% Treasury Notes.

Instead of converting the Twos purchased from the national banks into 3% bonds and notes the Federal reserve banks have the right to deposit them as security for circulating notes. These notes are similar in all respects to the national banks notes and are issued and redeemed under the same terms and conditions, but without being limited in amount by the amount of capital of the Federal reserve bank issuing them.

The Federal reserve banks are also authorized to issue Federal reserve bank notes under the terms of the Pittman Act to take the place of silver certificates retired because of the sale of silver dollars to assist in equalizing the exchanges in the

Far East. The act provides for a special issue of certificates of indebtedness equal in amount to that of the silver dollars retired. Against these certificates the Federal reserve banks are permitted to issue an equivalent amount of notes. It is expected that eventually the silver certificates will be reissued and the notes retired. The amount of notes so secured outstanding April 1, 1919 was $143,183,000. The notes issued by the Federal reserve banks against Government bond or certificate collateral are known as Federal reserve bank notes to distinguish them from the Federal reserve notes for which bond collateral is not required.

The Federal reserve banks are not restricted in their purchases of United States bonds to the holdings of the national banks. They may purchase such bonds in the open market and may take out circulation upon any 2% bonds or 4% bonds of 1925 which they may own, however acquired.

There is a substantial profit to be obtained by national banks and Federal reserve banks by taking advantage of the circulation privilege.

Public Deposits

Prior to the passage of the Federal Reserve Act only the national banks could be used as depositories of public moneys. The Federal Reserve Act provides that at the discretion of the Secretary of the Treasury the Federal reserve banks shall also act as depositories, but these banks are not required to give collateral security. Member banks of the Federal Reserve System, other than national banks, may not act as regular depositories of public moneys, except for postal-savings funds. These may be deposited with the State banks which are members of the system. All deposits of public moneys in member banks must be secured by deposit with the Treasurer

of the United States of United States bonds or other approved collateral.

Under the terms of the Liberty Loan acts the proceeds of sales of Liberty bonds are allowed to remain on special deposit with member and other approved banks. Such deposits must be secured by United States bonds or other approved collateral.

Loans

Any member bank which has loaned money to any of its customers for the purpose of carrying or trading in bonds or notes of the United States, may rediscount with its Federal reserve bank the bill or note of its customer, provided such bill or note (a) has a maturity at the time of discount of not more than 90 days, exclusive of days of grace; and (b) has the indorsement of the member bank. Such bill or note, however, need not necessarily be secured and need not be drawn for a commercial purpose other than for the purpose of carrying or trading in notes or bonds of the United States. Any member bank which has itself purchased obligations of the United States may procure a loan from its Federal reserve bank, for not exceeding 15 days, on its own promissory note, provided such note is secured by a deposit or pledge of bonds or notes of the United States.

The loans of this character by the Federal reserve banks about April 1, 1919, aggregated about $1,691,000,000.

According to the best available information, the member banks of the Federal Reserve System about the first of April, 1919, were loaning to customers upon the security of United States bonds and certificates and held investments in such bonds and certificates aggregating about seven billion dollars. This is almost exactly thirty per cent. of the war debt.

Chapter VI

Taxation

Old Debt

ALL issues of bonds and certificates made prior to the present war are "exempt from the payment of all taxes or duties of the United States as well as from taxation in any form by or under State, municipal or local authority."

The Treasury Department has ruled that such securities are not exempt from Federal estate taxes.

War Debt

As to Principal

All issues are exempt from any form of taxation as to principal, by or under United States, State, municipal or local authority; except estate or inheritance taxes.

As to Interest

First Liberty Loan 3½s

Exempt from all taxation, except Federal estate or inheritance taxes.

First Liberty Loan Converted 4s and 4¼s or Second-Converted 4¼, Second Liberty Loan 4s and Converted 4¼s, Third Liberty Loan 4¼s, Fourth Liberty Loan 4¼s, Certificates of Indebtedness, War Savings Certificates.

All these issues are exempt from taxation as to interest except

(a) As to estate or inheritance taxes, and (b) as to surtaxes, excess-profits and war profits-taxes, *i.e.*, they are exempt from the normal tax and during 1919 from the corporation income tax of 10%.

However, the income from an aggregate principal amount of \$5,000 of all issues combined (not \$5,000 of each issue) is exempt from all tax, except estate or inheritance taxes.

The Fourth Liberty Bond Act provided for the following additional exemptions from taxation for two years after end of the war as fixed by proclamation of the President:-

Fourth Liberty Loan 4¼s

The interest on \$30,000 bonds, or any part, whether the bonds were obtained by subscription or bought in the market, may be received free of surtaxes, excess-profits and war-profits taxes as well as from the normal tax.

First Liberty Loan Second-Converted 4¼s (Issue of Oct. 24, 1918).

The interest on \$30,000 bonds obtained by conversion from First 3½s under the terms of the Fourth Liberty Loan Act may also be received free of such taxes.

All other Liberty Loan 4s or 4¼s

The interest on \$45,000 bonds, or any part, may be received free of above taxes, *provided* at the time of making tax return the holder also owns—as an original subscriber—Fourth Liberty Loan 4¼s for two-thirds of the amount of other 4s and 4¼s for which exemption is claimed.

The Victory Liberty Loan Act affords the following additional exemptions:

All Liberty Loan 4s or 4¼s

The interest on \$30,000 in the aggregate of the above issues received on and after January 1, 1919, is exempt from all

taxation until the expiration of five years after the termination of the war.

All Liberty Loan 4s or 4¼s

The interest on $20,000 in the aggregate of the above bonds is also exempt from all taxation during the life of the Victory Liberty Notes, provided the aggregate principal amount of bonds for which such exemption is claimed does not exceed three times the amount of Victory Liberty Notes which the owner has obtained as an original subscriber and still owns at the date of making his tax return.

Example:

Liberty Loan 4s and 4¼s which may be held free of all taxes (except estate or inheritance taxes) including the normal income tax, surtaxes, excess profits and war-profits taxes.

For *life* of *bonds		$5,000
For *two years* after close of war:		
First-Second Converted 4¼s dated October 24, 1918	30,000	
Fourth 4¼s	30,000	
Other 4s and 4¼s—provided owner is an original subscriber to Fourth 4¼s for two-thirds of amount for which exemption is claimed—to an aggregate amount of	45,000	
Total for two years after war		105,000
For *five years* after close of war:		
Liberty 4s and 4¼s		$30,000
During *life of Victory Liberty Notes:*		
All 4s and 4¼s—provided owner is an original subscriber to Victory Liberty Notes for one-third of amount for which exemption is claimed—to an aggregate amount of		20,000
Aggregate amount of Liberty 4s and 4¼s which may be held free of tax		$160,000

*Provided no exemption is claimed because of holdings of certificates.

Victory Liberty Notes

4¾% Convertible Gold Notes

The interest upon these Notes is exempt from the *normal* Federal income tax. They are also exempt from all Federal, State and local taxation, except estate and inheritance taxes.

3¾% Convertible Gold Notes

The interest upon these notes is exempt from *all* Federal income taxes. They are also exempt from all Federal, State and local taxation, except estate and inheritance taxes.

Interest on Money Borrowed to Purchase United States Bonds

All interest paid or accrued within the taxable year on indebtedness incurred or continued to purchase or carry obligations of the United States issued after September 24, 1917, may be deducted in computing net income subject to taxation.

Inheritance Taxes

None of the war loans, certificates, or the income therefrom is exempt from Federal estate or inheritance taxes.

The Liberty Loan 4¼'s of any series and the Victory Notes may be used at par and accrued interest in paying estate or inheritance taxes, provided they were continuously held by the decedent for six months prior to death.

Calculating Tax Exemptions under the Federal Revenue Act of 1918

The application of this law to large incomes and to corporate incomes is so complicated that instead of endeavoring to

set forth here the manner in which holdings of United States bonds would affect taxable income, we suggest that any one interested communicate with our tax expert.

Special Tax Service

Our tax expert will upon request furnish all available data concerning the intricacies of the income tax law as applied to corporations or individuals owning United States securities. We have on file for the use of customers the latest rulings of the Commissioner of Internal Revenue, also annotated copies of the tax law.

State Taxation

The courts have decided that although States may not in any form levy a tax upon United States securities, they may tax as the property of their owners the shares of banks and other corporations the assets of which consist in whole or in part of such securities, and in valuing the shares for the purpose of taxation the shareholder cannot deduct the value of the national securities held by the corporation the shares of which are taxed.

However, a recent decision by the United States District Court for the Southern District of Iowa, in regard to the attempted assessment for taxation of the holdings of Liberty Bonds by banks is of interest. In this case, while the State claimed that the tax was laid upon the value of the stock as the property of the shareholder and not upon the Government bonds owned by the bank, the court ruled that although the tax was nominally upon the shares of the bank as the property of the shareholders, it was in reality a tax upon the property of the bank and therefore invalid so far as it included any exempt Government securities.

Chapter VII

Coupon Bonds

FOR the convenience of investors the Government issues two forms of bonds. One form is known as the coupon bond—this is payable to bearer, exactly the same as a bank note.

The interest on a coupon bond is collected by clipping from the bond a coupon calling for the amount of interest due on any given interest date. These interest coupons are payable to bearer and may usually be cashed at any banking institution. The coupons from Liberty Bonds may also be cashed at money-order post-offices and at a number of other places.

On account of the ease with which coupon bonds can be transferred from hand to hand and also because of the ease with which the interest coupons can be collected, coupon bonds are preferred for temporary investments by those who may wish to sell them within a short time and by those who wish to avoid the trouble attending the sale of registered bonds.

The courts have held that a coupon bond payable to bearer is good in the hands of a bona fide holder who acquires it by honest purchase at a fair market price without knowledge that it has been fraudulently obtained by any previous holder, even though the bond may have been lost by or stolen from another party. The recovery of lost or stolen coupon bonds or coupons is therefore attended with great difficulty and can rarely be accomplished unless they are found in the hands

of the thief or his accomplice or of some person who has obtained possession of them by fraud or under circumstances which will convict him of knowledge or suspicion of fraud on the part of those from whom he received them.

The fact that lost or stolen coupon bonds have been advertised by their numbers will not invalidate the title of an innocent holder for value, as it cannot be held that every purchaser of a bond is bound to have knowledge of all such notices or advertisements. The Treasury Department does not attempt to caveat or stop payment of lost or stolen coupon bonds or to assume any responsibility of deciding the question of disputed ownership, but recognizes only the bearer as entitled to payment. Coupon bonds may be exchanged for registered bonds.

Chapter VIII

Registered Bonds

REGISTERED bonds are certificates made payable to the owner, whose name and address are entered on the books of the Treasury Department at Washington, and whose name appears on the face of the bonds; title can be passed only by the owner executing the assignment form found on the back of the bond and having his signature witnessed by the proper official. Interest on registered bonds is paid by check.

Coupon bonds may be exchanged for registered bonds and, in the case of the Liberty Bonds, registered bonds may be exchanged for coupon bonds, but registered bonds of the old issues may not be exchanged for coupon bonds. All United States Government bonds now outstanding are issued in both coupon and registered form.

Assignments

In making assignments of registered bonds, care should be taken to observe the following regulations of the Treasury Department. The name of the registered owner must be spelled exactly the same on the assignment form as it is on the face of the bond. If the full name is given on the face of the bond it must be given on the back; the signature must be witnessed by the proper official, *i.e.*, an official of the Federal Government who is authorized to receive acknowledgments, or executive officers of Federal reserve banks, or their branches, and of national banks and incorporated State banks

and trust companies who are authorized by the bank to perform acts, attested by the seal of the bank. A notary public is not authorized to witness assignments.

In all cases the officer before whom an assignment is acknowledged must append his official designation and address, and affix his official seal if he has one; if he has not a seal this fact must be made known and attested. No official of the United States is authorized to charge a fee for witnessing an assignment of United States registered bonds or of a power of attorney to assign such bonds, or to collect interest thereon and, as a rule, no charge for this service is made by bank officials.

Assignment by Married Women

In the case of a married woman whose bonds stand in her maiden name the assignment should be made in the maiden name followed by the married name, thus, "Mary Smith, now by marriage Mary Brown."

Assignment by Representative and Successor

In case of death or successorship the representative of the deceased person, or the successor, must furni'. official evidence of such decease or successorship and of his own appointment, authority, or power. An executor or administrator may assign bonds standing in the name of the deceased person in whose stead such executor or administrator shall be acting.

Where there are two or more legal representatives all must unite in the assignment, unless by a decree of court or testamentary provision some one or more of them is or are designated and empowered to dispose of the bonds.

Bonds standing in the name of a person in the capacity of a fiduciary or trustee can not be assigned after his death by his executors or administrators, but must be assigned by a successor duly appointed by the court having jurisdiction.

Assignments by an executor, administrator, trustee, guardian or attorney to himself individually are void unless he be specially authorized to execute such assignment by a court having jurisdiction of the matter.

Assignments by Attorney in Fact

A person entitled to assign bonds may, by a duly executed power of attorney, appoint an attorney in fact for that purpose. By virtue of the authority so conferred, the attorney can execute the assignments in the same manner as the principal, and, provided the power of attorney authorizes him to do so, he may appoint one or more substitutes to act in his place. An assignment by an attorney in fact or his substitute to himself individually is void unless sanctioned by a court of competent jurisdiction; in which case a certified copy of the court order must be filed with the department.

Powers of attorney authorizing the assignment of bonds should be sent, for record, to the Secretary of the Treasury, Division of Loans and Currency.

Powers of attorney to assign or transfer registered bonds must be acknowledged in the presence of one of the officers authorized to witness assignments.

Interest Payments

Checks for interest on registered bonds are mailed by the Government to the registered owner, or to any other person

who may be designated by the owner to receive the interest. These checks are payable, when properly endorsed, on presentation at the United States Treasury, at the office of any Assistant Treasurer of the United States, Federal reserve bank, or at any national bank that has been designated an active depositary for public moneys. Almost any bank or trust company will cash these checks upon proper identification of the holder. The endorsement must be in ink or indelible pencil and must correspond exactly with the name as printed on the face of the check. A married woman when endorsing a check drawn to her maiden name should endorse it with both names as stated above under "Assignments." Endorsements made by an agent, attorney, guardian, executor, administrator, or trustee of an estate are not recognized unless evidence of authority has been filed with the Auditor for the Treasury Department.

Powers of Attorney to Collect Interest

Powers of attorney and testamentary evidence designed as authority to collect interest checks should be filed with the Auditor for the Treasury Department and that officer should specifically be advised at which of the offices referred to in the previous paragraph it is desired that the interest checks, under such powers, shall be paid. Notice of the appointment of an attorney to collect interest should be given to the Secretary of the Treasury.

Powers of attorney to indorse and collect interest checks must be acknowledged before one of the officers authorized to witness the assignments of registered bonds or before a notary public. The acknowledging officer must add his official designation, address and an impression of his seal, if he has one.

Interest to Joint Holders of Registered Bonds

Interest will be paid to any one of several joint holders, co-trustees, joint executors, administrators or guardians; but in the execution to a third party of a power to collect interest checks all must join. In case of the death of any such joint holders, co-trustees, and so forth, the survivor or survivors will be recognized as having full authority, upon due proof of such death and survivorship.

Opening and Closing of Transfer Books; Denominations

The transfer books, for the purpose of changing the ownership of registered bonds, open and close in accordance with the schedule printed in the tables to be found on pages 102 and 103. Coupon bonds can be exchanged for registered bonds, or, in the case of the Liberty Bonds, registered bonds for coupon bonds, whenever the transfer books are open. The denominations in which bonds of each issue are made are also given in this table.

Chapter IX

Lost, Destroyed and Defaced Bonds

Coupon Bonds

THERE is no authority under existing law empowering the Treasury Department to issue duplicates of United States coupon bonds which have been lost or stolen, or to redeem such bonds.

In the case of coupon bonds which have been destroyed or defaced, the Treasury Department is authorized upon proper evidence to issue new bonds. An indemnity bond must be filed.

Destroyed Coupons

In cases where coupons detached from the bonds have been destroyed or defaced, there is no relief.

So long as coupons remain attached to the bonds with which they were issued they are deemed to constitute parts thereof, and therefore if one or more coupons whilst attached to a bond becomes destroyed or defaced, this would be a case of partial destruction or defacement of the bond and a duplicate bond with proper coupons attached would be issued.

Registered Bonds

In the case of the loss, theft, or supposed destruction of United States registered bonds immediate notification of such fact should be sent the Secretary of the Treasury, Division of Loans and Currency, in order that a caveat may be entered on the books of the department against the transfer of such bonds.

United States Public Debt

April 1, 1919

Compiled from official data

See note next page.

OLD DEBT BEARING INTEREST

Title of Loan	*Interest Rate*	*Interest Payable*	*Redeemable or Payable*	*Outstanding*
Consols of 1930†	2	Q. Jan.	After April 1, 1930	$599,724,050
Loan of 1925†	4	Q. Feb.	After Feb. 1, 1925	118,489,900
Panama Canal,				
Series 1906†	2	Q. Feb.	After Aug. 1, 1916	48,954,180
			Payable Aug. 1, 1936	
Series 1908†	2	Q. Feb.	After Nov. 1, 1918	25,947,400
			Payable Nov. 1, 1938	
Series 1911	3	Q. Mar.	Payable June 1, 1961	50,000,000
Conversion Bonds	3	Q. Jan.	Payable 30 years from date, 1916–17	28,894,500
Postal Savings Bonds	2½	J. & J.	After 1 year from date	11,350,760
			Payable 20 years from date, 1911–18	

Aggregate non-war interest-bearing debt	$883,360,790
Matured non-war debt upon which interest has ceased .	4,437,250
Total non-war bonded debt	$887,798,040

OLD DEBT NOT BEARING INTEREST

United States Notes	$346,681,016		
Less Gold Reserve	152,979,025	$193,701,991	
Old Demand Notes		53,012	
Fractional Currency		6,844,418	
National Bank Notes and Federal Reserve Bank Notes assumed by the United States upon deposit of lawful money for their retirement		42,546,190	243,145,611
Total Old Debt			$1,130,943,651

†Available as security for bank notes.

WAR DEBT

Title of Loan	*Interest Rate*	*Interest Payable*	*Redeemable or Payable*	*Outstanding*
LIBERTY LOANS				
First	3½	J & D	After June 15, 1932 Payable June 15, 1947	$1,413,805,200
Converted	4	J & D	After June 15, 1932 Payable June 15, 1947	198,865,200
Converted	4¼	J & D	After June 15, 1932 Payable June 15, 1947	376,129,100
Second	4	M & N	After Nov. 15, 1927 Payable Nov. 15, 1942	860,365,100
Converted	4¼	M & N	After Nov. 15, 1927 Payable Nov. 15, 1942	2,752,153,400
Third	4¼	M & S	Payable Sept. 15, 1928	4,055,687,050
Fourth	4¼	A & O	After Oct. 15, 1933 Payable Oct. 15, 1938	6,993,073,250
VICTORY NOTES				
Free of Tax	3¾	J & D	On June 15 or Dec. 15, 1922 Payable May 20, 1923	*4,500,000,000
Taxable	4¾	J & D		
Total Liberty Loans				$16,650,078,300
WAR SAVINGS AND THRIFT STAMPS Approximate amounts			Payable Jan. 1, 1923 Jan. 1, 1924	1,000,000,000 40,000,000
CERTIFICATES OF INDEBTEDNESS—Approximate amount				5,500,000,000
Total War Debt				$23,190,078,300
Total Old Debt (see opposite page)				1,130,943,651
Total Debt				$24,321,021,951

*Authorized—Not included in total. Will retire a corresponding amount of Certificates of Indebtedness.

NOTE.—The above statement is compiled from the Financial Statement of the United States Government for October 31, 1918, and the Daily Statements of the United States Treasury Department for the period from November 1, 1918 to March 31, 1919 and from other official statements. There are some discrepancies which cannot be reconciled, but the figures are believed to be substantially correct.

Transfer Books—Denominations

<table>
<tr><th rowspan="2">Old Debt</th><th colspan="2">Transfer Books</th><th colspan="2">Denominations</th></tr>
<tr><th>Close</th><th>Open</th><th>Coupon</th><th>Registered</th></tr>
<tr><td>Panama Canal
2's 1916-1936</td><td>Jan. 15
April 15
July 15
Oct. 15</td><td>Feb. 1
May 1
Aug. 1
Nov. 1</td><td>$20
100
1,000</td><td>$20
100
1,000
10,000</td></tr>
<tr><td>Panama Canal
2's 1918-1938</td><td>Jan. 15
April 15
July 15
Oct. 15</td><td>Feb. 1
May 1
Aug. 1
Nov. 1</td><td>$20
100
1,000</td><td>$20
100
1,000
10,000</td></tr>
<tr><td>Refunding Consols
2's 1930</td><td>Nov. 30
Feb. 28
May 31
Aug. 31</td><td>Jan. 1
April 1
July 1
Oct. 1</td><td>$50
100
500
1,000</td><td>$50
100
500
1,000
5,000
10,000
50,000</td></tr>
<tr><td>Postal Savings
2½'s 1931-1937</td><td>Nov. 30
May 31</td><td>Jan. 1
July 1</td><td>$20
40
60
80
100
500</td><td>$20
40
60
80
100
500</td></tr>
<tr><td>Panama Canal
3's 1961</td><td>Feb. 15
May 15
Aug. 15
Nov. 15</td><td>Mar. 1
June 1
Sept. 1
Dec. 1</td><td>$100
500
1,000</td><td>$100
500
1,000
10,000</td></tr>
<tr><td>Conversion
3's 1946-1947</td><td>Nov. 30
Feb. 28
May 31
Aug. 31</td><td>Jan. 1
April 1
July 1
Oct. 1</td><td>$100
1,000
5,000
10,000</td><td>$100
1,000
5,000
10,000</td></tr>
<tr><td>Long Fours
4's 1925</td><td>Jan. 15
April 15
July 15
Oct. 15</td><td>Feb. 1
May 1
Aug. 1
Nov. 1</td><td>$50
100
500
1,000</td><td>$50
100
500
1,000
5,000
10,000</td></tr>
</table>

War Debt *Liberty Bonds*	Transfer Books		Denominations	
	Close	Open	Coupon	Registered
First, 1932-'47 **3½'s** Dated June 15, 1917 Conversion privileges—See Note.	May 15 Nov. 15	June 16 Dec. 16	$50 100 500 1,000	$100 500 1,000 5,000 10,000 50,000 100,000
First Converted, 1932-'47 **4's** Dated Nov. 15, 1917 Conversion privileges — See Note. First Converted, 1932-'47 **4¼'s** Dated May 9, 1918 First Second-Converted, 1932-'47 **4¼'s** Dated, Oct. 24, 1918	May 15 Nov. 15	June 16 Dec. 16	$50 100 500 1,000 5,000 10,000	$50 100 500 1,000 5,000 10,000 50,000 100,000
Second, 1927–'42 **4's** Dated, Nov. 15, 1917 Conversion privileges — See Note. Second Converted, 1927–'42 **4¼'s** Dated, May 9, 1918	April 15 Oct. 15	May 16 Nov. 16	$50 100 500 1,000 5,000 10,000	$50 100 500 1,000 5,000 10,000 50,000 100,000
Third, 1928 **4¼'s** Dated, May 9, 1918	Feb. 15 Aug. 15	Mar. 16 Sept. 16	$50 100 500 1,000 5,000 10,000	$50 100 500 1,000 5,000 10,000 50,000 100,000
Fourth, 1933-'38 **4¼'s** Dated, October 24, 1918	Mar. 15 Sept. 15	April 16 Oct. 16		
Victory Notes 1922-1923 **3¾'s** **4¾'s** Dated, May 20, 1919	Nov. 15 May 15	Dec. 16 June 16	$50 100 500 1,000 5,000 10,000	$50 100 500 1,000 5,000 10,000 50,000 100,000

NOTE—CONVERSION PRIVILEGES

First Liberty 3½'s

If any subsequent series of bonds (not including United States certificates of indebtedness and other short-term obligations) bearing a higher rate of interest than 3½% shall be issued prior to the termination of the war with Germany, the date of such termination to be fixed by a proclamation of the President, the holders of the First Liberty 3½'s shall have the privilege of converting the same, within such period and upon such further terms and conditions covering matters of detail as the Secretary of the Treasury may prescribe, into an equal par amount of bonds bearing such higher rate of interest and substantially identical with the bonds of such subsequent series, except that the bonds to be issued upon such conversion shall be identical with the bonds of the First Liberty Loan as to maturity of principal and of interest, and terms of redemption. The present privilege of conversion into First Liberty Loan Second-converted 4¼% bonds expires April 24, 1919.

Second Liberty 4's and First Converted 4's

By the terms of the Victory Liberty Loan Act which became a law March 3, 1919, it is provided that the Conversion Privilege which expired November 9, 1918, may be extended by the Secretary of the Treasury for such period, and upon such terms and conditions and subject to such rules and regulations as he may prescribe. For the purpose of computing the amount of interest payable, bonds presented for conversion under any such extension shall be deemed to be converted on the dates for the payment of the semi-annual interest on the respective bonds so presented for conversion next succeeding the date of such presentation. The Secretary has announced, under date of March 7, 1919, an extension of this conversion privilege beginning March 7, 1919, and ending at such date as may be fixed by the Secretary on six months' public notice.

Neither of these 4% issues or the 4¼% bonds into which they are convertible have any other conversion privileges.

Trend of the Market

Before and After Former Wars and Other Special Crises

AFTER FUNDING OF REVOLUTIONARY DEBT

Following the passage of the Act on August 12, 1790, providing for the funding of the Revolutionary debt, the first recorded transactions in the new 6% bonds were at 70%. On December 31 the bonds were quoted at 90%. By August 1, 1791, they had advanced to par and on December 3, 1791, they were selling at 111%. On February 1 of the following year, 1792, they sold at 128%. This marked the climax of the speculation in the bonds, although during the entire year 1792 quotations ranged around 105% to 110%.

WAR OF 1812

Prior to the War of 1812 what was known as the "old 6% stock," the same issue as that referred to above, was quoted in January, 1809, at 103%, and in July at 101½%, while the 3s were quoted at about 65%. In 1811 the 6s were quoted in the London market at 101% to 102% and the 3s at 65% to 70%. In 1812 the Government placed a new issue of 6% stock at par, but in 1813 was unable to obtain more than 88% for 6% stock. Taking this issue as a basis we find that in 1814 it sold at a low price of 85% and a high price of 93%. In January, 1815, it was selling as low as 76%. Following the declaration of peace it sold at 97½% in July. It maintained this price until about July, 1816, when it advanced to 99½%; in January, 1817, it was quoted at par and in January, 1818, at 106½%.

THE MEXICAN WAR

At the opening of the war in 1846 6% bonds were sold at prices ranging from 100 to 101, and in 1847 a large issue of 6s was placed at prices ranging from 101¼ to 102. The last battle of the war was fought in September, 1847. Quotations in the early part of 1847 for 6% stock were as high as 108⅞. Toward the end of the year prices fell off to about par. However, by August, 1848, prices had advanced to 104¾ and in December to 107⅞. In 1849 the 6s sold at 109 in January, 110 to 111 in February and maintained this price in March. In May they had advanced to 112 and in June to 115. In 1850, the Government was able to sell 5% stock at par which was equivalent to about 120 for 6% stock.

THE CIVIL WAR

It so happens that there were two issues of bonds made at the beginning of the Civil War which were quoted all through the period of the war and which, therefore, form a very good basis for comparison. These are the 6s of 1880 and 1881. As the quotations of bonds during the Civil War were made in the terms of the depreciated legal tender notes, it is necessary to reduce quotations to a gold basis. This has been done in the following table:

Year	*High*	*Low*	*Year*	*High*	*Low*
*1861	95.75	83.00	1866	84.75	73.71
1862	100.75	85.13	1867	82.36	78.88
1863	85.06	51.53	1868	84.18	78.67
1864	68.92	40.15	1869	99.07	82.22
†1865	80.25	50.73	1870	102.02	96.14

*Fort Sumter fired on April 12. †Lee surrendered April 9. See also pages 43 and 60.

THE CURRENCY CRISIS OF 1894–1897

During President Cleveland's first administration, in order to maintain the parity of the different forms of currency, it was found necessary to issue bonds with which to acquire gold to replenish the gold reserve. There is no one issue of bonds which may be taken as a good basis for this period. Ten-year 5s were sold in February, 1894, at 117.22, a 3% basis of income. They advanced to 120. A further issue in November carried the price back to 117½. In the following February 4s of 1925 were sold on a 3¾% basis, at 104.49. They immediately advanced, selling up to 123⅞. An additional issue in January, 1896, was made at 111.166. Quotations for both the 5s and the 4s were depressed during that year. the 5s selling as low as 108½ and the 4s at 111¼, but in 1897 the 4s sold up to 129½ and the 5s to 115⅞.

THE SPANISH WAR OF 1898

The war loan of this period was a 3% issue which was placed at 100, and immediately advanced to a premium. The following is a statement compiled by the Government Actuary showing the average price at which these bonds sold from 1898 to 1901. In 1898, 105.31; in 1899, 108.20; in 1900, 109.72; and in 1901, 109.34.

PRICES ADVANCE AFTER EVERY CRISIS

It will thus be seen that in every instance after the crisis was passed the bonds have advanced in a marked degree. There is every reason to expect that such will be the case with the Liberty issues.

Bankers Trust Company's Tables

of

Liberty Bond and Note Values

3½% Bond—Interest payable semi-annually
RATES OF INTEREST REALIZED
if purchased at prices indicated and held to maturity

Price	YEARS TO RUN															Price
	10	10½	11	11½	12	12½	13	13½	25	25½	26	26½	27	27½	28	
105.0					3.00	3.02	3.03	3.05	3.21	3.21	3.22	3.22	3.22	3.22	3.23	**105.0**
104.9					3.01	3.03	3.04	3.06	3.21	3.22	3.22	3.22	3.23	3.23	3.23	104.9
104.8				3.00	3.02	3.04	3.05	3.07	3.22	3.22	3.23	3.23	3.23	3.23	3.24	104.8
104.7			3.00	3.01	3.03	3.05	3.06	3.07	3.23	3.23	3.23	3.23	3.24	3.24	3.24	104.7
104.6			3.01	3.02	3.04	3.05	3.07	3.08	3.23	3.24	3.23	3.24	3.24	3.25	3.25	104.6
104.5		3.00	3.02	3.03	3.05	3.06	3.08	3.09	3.24	3.24	3.24	3.25	3.25	3.25	3.25	104.5
104.4		3.01	3.03	3.04	3.06	3.07	3.09	3.10	3.24	3.25	3.25	3.25	3.25	3.26	3.26	104.4
104.3	3.00	3.02	3.04	3.05	3.07	3.08	3.10	3.10	3.25	3.25	3.26	3.26	3.26	3.26	3.26	104.3
104.2	3.01	3.03	3.05	3.06	3.08	3.09	3.10	3.12	3.25	3.26	3.26	3.26	3.27	3.27	3.27	104.2
104.1	3.02	3.04	3.06	3.07	3.09	3.10	3.11	3.13	3.26	3.26	3.27	3.27	3.27	3.27	3.27	104.1
104.0	3.03	3.05	3.07	3.08	3.10	3.11	3.12	3.13	3.27	3.27	3.27	3.27	3.28	3.28	3.28	**104.0**
103.9	3.05	3.06	3.08	3.09	3.11	3.12	3.13	3.14	3.27	3.27	3.28	3.28	3.28	3.28	3.29	103.9
103.8	3.06	3.07	3.09	3.10	3.12	3.13	3.14	3.15	3.28	3.28	3.28	3.28	3.29	3.29	3.29	103.8
103.7	3.07	3.09	3.10	3.11	3.13	3.14	3.15	3.16	3.28	3.28	3.29	3.29	3.29	3.29	3.20	103.7
103.6	3.08	3.10	3.11	3.12	3.14	3.15	3.16	3.17	3.29	3.29	3.29	3.30	3.30	3.30	3.30	103.6
103.5	3.09	3.11	3.12	3.14	3.15	3.16	3.17	3.18	3.29	3.30	3.30	3.30	3.30	3.31	3.31	103 5
103.4	3.10	3 12	3.13	3.15	3.16	3.17	3.18	3.19	3.30	3.30	3.30	3.31	3.31	3.31	3.31	103.4
103.3	3.11	3.13	3.14	3.16	3.17	3.18	3.19	3.20	3.31	3.31	3.31	3.31	3.31	3.32	3.32	103.3
103.2	3.13	3.14	3.15	3.17	3.18	3.19	3.20	3.21	3.31	3.31	3 31	3.32	3.32	3.32	3.32	103.2
103.1	3.14	3.15	3.16	3.18	3.19	3.20	3.21	3.22	3.32	3.32	3.32	3.32	3.32	3.33	3.33	103.1
103.0	3.15	3.16	3.17	3 19	3.20	3.21	3.22	3.22	3 32	3.32	3.33	3.33	3 33	3.33	3.33	**103.0**
102.9	3.16	3.17	3.18	3.20	3.21	3.22	3.23	3.23	3.33	3.33	3.33	3.33	3.34	3 34	3.34	102.9
102.8	3.17	3.18	3.20	3.21	3.22	3.23	3.23	3.24	3 33	3.34	3.34	3.34	3.34	3.34	3.35	102.8
102.7	3.18	3.20	3.21	3.22	3.23	3.24	3.24	3.25	3.34	3 34	3.34	3.35	3.35	3.35	3.35	102.7
102.6	3.19	3.21	3.22	3.23	3.24	3.25	3.25	3.26	3.35	3.35	3.35	3.35	3 35	3.35	3.36	102.6
102.5	3.21	3.22	3.23	3.24	3.25	3.26	3.26	3.27	3.35	3.35	3.36	3.36	3.36	3.36	3.36	102.5
102.4	3.22	3.23	3.24	3.25	3.26	3.26	3.27	3.28	3 36	3.36	3.36	3.36	3.36	3 37	3 37	102.4
102.3	3.23	3.24	3.25	3.26	3.27	3.27	3.28	3.29	3.36	3.37	3.37	3.37	3.37	3 37	3 37	102.3
102.2	3.24	3 25	3.26	3.27	3.28	3.28	3.29	3.30	3.37	3.37	3.37	3.37	3 37	3.38	3.38	102.2
102.1	3.25	3.26	3.27	3.28	3.29	3.29	3.30	3.31	3.38	3.38	3.38	3.38	3.38	3.38	3.38	102.1
102.0	3.26	3.27	3.28	3.29	3.30	3.30	3.31	3.31	3 38	3.38	3.38	3.39	3.39	3.39	3.39	**102.0**
101.9	3.28	3.29	3.29	3.30	3.31	3.31	3.32	3.32	3.39	3.39	3 39	3.39	3.39	3.39	3.40	101.9
101.8	3.29	3.30	3.30	3.31	3.32	3.32	3.33	3.33	3.39	3.40	3.40	3 40	3.40	3 40	3 40	101 8
101.7	3.30	3.31	3.31	3.32	3.33	3.33	3.34	3.34	3.40	3.40	3.40	3.40	3 40	3 40	3.41	101.7
101.6	3.31	3.32	3.32	3.33	3.34	3.34	3.35	3.35	3.41	3.41	3.41	3.41	3.41	3.41	3.41	101.6
101.5	3.32	3.33	3.34	3.34	3.35	3.35	3.36	3.36	3.41	3.41	3.41	3.41	3 42	3.42	3 42	101.5
101.4	3.33	3.34	3.35	3.35	3.36	3.36	3.37	3.37	3.42	3.42	3.42	3.42	3.42	3.42	3.42	101.4
101.3	3.35	3.35	3.36	3.36	3.37	3.37	3.38	3.38	3.42	3.42	3.42	3.43	3.43	3.43	3 43	101.3
101.2	3.36	3.36	3.37	3.37	3.38	3.38	3.39	3.39	3.43	3.43	3.43	3.43	3.43	3.43	3.43	101.2
101.1	3.37	3.37	3.38	3.38	3.39	3.39	3.39	3.40	3.43	3.43	3.44	3.44	3.44	3.44	3.44	101.1
101.0	3.38	3.38	3.39	3.39	3.40	3.40	3.40	3.41	3.44	3.44	3 44	3.44	3.44	3.44	3.44	**101.0**
100.9	3.39	3.40	3.40	3.40	3.41	3.41	3.41	3.42	3.45	3.45	3.45	3.45	3.45	3.45	3.45	100.9
100.8	3.40	3.41	3.41	3.41	3.42	3.42	3.42	3.43	3.45	3.45	3 45	3.45	3.46	3.46	3.46	100.8
100.7	3.42	3.42	3.42	3.42	3.43	3.43	3.43	3 44	3.46	3.46	3.46	3.46	3.46	3.46	3.46	100.7
100.6	3.43	3.43	3.43	3.44	3.44	3.44	3.44	3.44	3.46	3.46	3.47	3.47	3.47	3.47	3.47	100.6
100.5	3.44	3.44	3.44	3.45	3.45	3.45	3.45	3.45	3.47	3.47	3.47	3.47	3.47	3.47	3.47	100.5
100.4	3.45	3.45	3.46	3.46	3.46	3.46	3.46	3.46	3.48	3.48	3.48	3.48	3.48	3.48	3.48	100.4
100.3	3.46	3.47	3.47	3.47	3.47	3.47	3.47	3.47	3.48	3.48	3.48	3.48	3.48	3.48	3.48	100.3
100.2	3.48	3.48	3.48	3.48	3.48	3.48	3 48	3.48	3.49	3.49	3.49	3.49	3.49	3.49	3.49	100.2
100.1	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	3.49	100.1
100.0	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3 50	3.50	3.50	3.50	3.50	3.50	**100.0**

3½% Bond—Interest payable semi-annually

RATES OF INTEREST REALIZED

if purchased at prices indicated and held to maturity

Price	YEARS TO RUN 10	10½	11	11½	12	12½	13	13½	25½	26	26½	27	27½	28	28½	Price
100.0	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50	**100.0**
99.9	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	3.51	99.9
99.8	3.53	3.52	3.52	3.52	3.52	3.52	3.52	3.52	3.51	3.51	3.51	3.51	3.51	3.51	3.51	99.8
99.7	3.54	3.53	3.53	3.53	3.53	3.53	3.53	3.53	3.52	3.52	3.52	3.52	3.52	3.52	3.52	99.7
99.6	3.55	3.55	3.54	3.54	3.54	3.54	3.54	3.54	3.52	3.52	3.52	3.52	3.52	3.52	3.52	99.6
99.5	3.56	3.56	3.56	3.55	3.55	3.55	3.55	3.55	3.53	3.53	3.53	3.53	3.53	3.53	3.53	99.5
99.4	3.57	3.57	3.57	3.56	3.56	3.56	3.56	3.56	3.54	3.53	3.53	3.53	3.53	3.53	3.53	99.4
99.3	3.58	3.58	3.58	3.58	3.57	3.57	3.57	3.56	3.54	3.54	3.54	3.54	3.54	3.54	3.54	99.3
99.2	3.60	3.59	3.59	3.59	3.58	3.58	3.58	3.57	3.55	3.55	3.55	3.55	3.54	3.54	3.54	99.2
99.1	3.61	3.60	3.60	3.60	3.60	3.59	3.59	3.58	3.55	3.55	3.55	3.55	3.55	3.55	3.55	99.1
99.0	3.62	3.62	3.61	3.61	3.60	3.60	3.60	3.59	3.56	3.56	3.56	3.56	3.56	3.56	3.56	**99.0**
98.9	3.63	3.63	3.62	3.62	3.61	3.61	3.61	3.60	3.57	3.56	3.56	3.56	3.56	3.56	3.56	98.9
98.8	3.64	3.64	3.63	3.63	3.62	3.62	3.62	3.61	3.57	3.57	3.57	3.57	3.57	3.57	3.57	98.8
98.7	3.66	3.65	3.65	3.64	3.64	3.63	3.63	3.62	3.58	3.58	3.58	3.58	3.57	3.57	3.57	98.7
98.6	3.67	3.66	3.66	3.65	3.65	3.64	3.64	3.63	3.58	3.58	3.58	3.58	3.58	3.58	3.58	98.6
98.5	3.68	3.67	3.67	3.66	3.66	3.65	3.65	3.64	3.59	3.59	3.59	3.59	3.59	3.59	3.58	98.5
98.4	3.69	3.69	3.68	3.67	3.67	3.66	3.66	3.65	3.60	3.59	3.59	3.59	3.59	3.59	3.59	98.4
98.3	3.71	3.70	3.69	3.68	3.68	3.67	3.67	3.66	3.60	3.60	3.60	3.60	3.60	3.60	3.60	98.3
98.2	3.72	3.71	3.70	3.69	3.69	3.68	3.68	3.67	3.61	3.61	3.61	3.60	3.60	3.60	3.60	98.2
98.1	3.73	3.72	3.71	3.71	3.70	3.69	3.69	3.68	3.61	3.61	3.61	3.61	3.61	3.61	3.61	98.1
98.0	3.74	3.73	3.72	3.72	3.71	3.70	3.70	3.69	3.62	3.62	3.62	3.62	3.62	3.61	3.61	**98.0**
97.9	3.75	3.74	3.74	3.73	3.72	3.71	3.71	3.70	3.63	3.62	3.62	3.62	3.62	3.62	3.62	97.9
97.8	3.77	3.76	3.75	3.74	3.73	3.72	3.72	3.71	3.63	3.63	3.63	3.63	3.63	3.63	3.62	97.8
97.7	3.78	3.77	3.76	3.75	3.74	3.73	3.73	3.72	3.64	3.64	3.64	3.63	3.63	3.63	3.63	97.7
97.6	3.79	3.78	3.77	3.76	3.75	3.74	3.74	3.73	3.64	3.64	3.64	3.64	3.64	3.64	3.64	97.6
97.5	3.80	3.79	3.78	3.77	3.76	3.75	3.75	3.74	3.65	3.65	3.65	3.65	3.65	3.64	3.64	97.5
97.4	3.82	3.80	3.79	3.78	3.77	3.76	3.75	3.75	3.66	3.66	3.65	3.65	3.65	3.65	3.65	97.4
97.3	3.83	3.81	3.80	3.79	3.78	3.77	3.76	3.76	3.66	3.66	3.66	3.66	3.66	3.65	3.65	97.3
97.2	3.84	3.83	3.82	3.80	3.79	3.78	3.77	3.77	3.67	3.67	3.67	3.66	3.66	3.66	3.66	97.2
97.1	3.85	3.84	3.83	3.82	3.80	3.79	3.78	3.78	3.68	3.67	3.67	3.67	3.67	3.67	3.66	97.1
97.0	3.86	3.85	3.84	3.83	3.81	3.80	3.79	3.79	3.68	3.68	3.68	3.68	3.67	3.67	3.67	**97.0**
96.9	3.88	3.86	3.85	3.84	3.82	3.81	3.80	3.80	3.69	3.69	3.68	3.68	3.68	3.68	3.68	96.9
96.8	3.89	3.87	3.86	3.85	3.84	3.82	3.81	3.81	3.69	3.69	3.69	3.69	3.69	3.68	3.68	96.8
96.7	3.90	3.89	3.87	3.86	3.85	3.84	3.82	3.82	3.70	3.70	3.70	3.69	3.69	3.69	3.69	96.7
96.6	3.91	3.90	3.88	3.87	3.86	3.85	3.83	3.83	3.71	3.70	3.70	3.70	3.70	3.70	3.69	96.6
96.5	3.93	3.91	3.90	3.88	3.87	3.86	3.85	3.84	3.71	3.71	3.71	3.71	3.70	3.70	3.70	96.5
96.4	3.94	3.92	3.91	3.89	3.88	3.87	3.86	3.84	3.72	3.72	3.71	3.71	3.71	3.71	3.71	96.4
96.3	3.95	3.93	3.92	3.90	3.89	3.88	3.87	3.85	3.73	3.72	3.72	3.72	3.72	3.71	3.71	96.3
96.2	3.96	3.95	3.93	3.91	3.90	3.89	3.88	3.86	3.73	3.73	3.73	3.72	3.72	3.72	3.72	96.2
96.1	3.98	3.96	3.94	3.93	3.91	3.90	3.89	3.87	3.74	3.74	3.73	3.73	3.73	3.73	3.72	96.1
96.0	3.99	3.97	3.95	3.94	3.92	3.91	3.90	3.88	3.74	3.74	3.74	3.74	3.73	3.73	3.73	**96.0**
95.9	4.00	3.98	3.96	3.95	3.93	3.92	3.91	3.89	3.75	3.75	3.74	3.74	3.74	3.74	3.74	95.9
95.8		3.99	3.98	3.96	3.94	3.93	3.92	3.90	3.76	3.75	3.75	3.75	3.75	3.74	3.74	95.8
95.7		4.01	3.99	3.97	3.95	3.94	3.93	3.91	3.76	3.76	3.76	3.75	3.75	3.75	3.75	95.7
95.6			4.00	3.98	3.97	3.95	3.94	3.92	3.77	3.77	3.76	3.76	3.76	3.7[illegible]	3.75	95.6
95.5				3.99	3.98	3.96	3.95	3.93	3.78	3.77	3.77	3.77	3.76	3.76	3.76	95.5
95.4				4.00	3.99	3.97	3.96	3.94	3.78	3.78	3.78	3.77	3.77	3.77	3.76	95.4
95.3					4.00	3.98	3.97	3.95	3.79	3.79	3.78	3.78	3.78	3.77	3.77	95.3
95.2						3.99	3.98	3.96	3.80	3.79	3.79	3.78	3.78	3.78	3.78	95.2
95.1						4.00	3.99	3.97	3.80	3.80	3.79	3.79	3.79	3.78	3.78	95.1
95.0							4.00	3.98	3.81	3.80	3.80	3.80	3.79	3.79	3.79	**95.0**

3¾% Bond—Interest payable semi-annually

RATES OF INTEREST REALIZED

if purchased at prices indicated and held to maturity

Price	1 mo.	2 mos.	4 mos.	6 mos.	8 mos.	10 mos.	1	1½	2	2½	3	3½	4	4½	5	Price
	PERIOD TO RUN															
100.0	3*72	3*73	3*74	3.75	3*74	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	**100.0**
99.9	4.93	4.33	4.04	3.95	3.90	3.87	3.85	3.82	3.80	3.79	3.79	3.78	3.78	3.77	3.77	99.9
99.8	6.14	4.94	4.35	4.16	4.05	3.99	3.96	3.89	3.85	3.83	3.82	3.81	3.80	3.80	3.79	99.8
99.7		5.55	4.65	4.36	4.20	4.11	4.06	3.96	3.91	3.88	3.86	3.84	3.83	3.82	3.82	99.7
99.6			4.96	4.57	4.36	4.24	4.16	4.03	3.96	3.92	3.89	3.87	3.86	3.85	3.84	99.6
99.5			5.27	4.77	4.51	4.36	4.27	4.10	4.01	3.96	3.93	3.90	3.89	3.87	3.86	99.5
99.4				4.98	4.67	4.49	4.37	4.17	4.06	4.00	3.96	3.94	3.91	3.90	3.88	99.4
99.3				5.19	4.82	4.61	4.47	4.24	4.12	4.05	4.00	3.97	3.94	3.92	3.90	99.3
99.2				5.39	4.98	4.73	4.58	4.31	4.17	4.09	4.04	4.00	3.97	3.95	3.93	99.2
99.1					5.13	4.86	4.68	4.38	4.22	4.13	4.07	4.03	4.00	3.97	3.95	99.1
99.0					5.29	4.98	4.79	4.45	4.28	4.18	4.11	4.06	4.02	3.99	3.97	**99.0**
98.9						5.11	4.89	4.52	4.33	4.22	4.14	4.09	4.05	4.02	3.99	98.9
98.8						5.23	5.00	4.59	4.38	4.26	4.18	4.12	4.08	4.04	4.02	98.8
98.7						5.36	5.10	4.66	4.44	4.30	4.22	4.15	4.11	4.07	4.04	98.7
98.6							5.21	4.73	4.49	4.35	4.25	4.18	4.13	4.09	4.06	98.6
98.5							5.31	4.80	4.54	4.39	4.29	4.22	4.16	4.12	4.08	98.5
98.4								4.87	4.60	4.43	4.32	4.25	4.19	4.14	4.11	98.4
98.3								4.94	4.65	4.48	4.36	4.28	4.22	4.17	4.13	98.3
98.2								5.01	4.70	4.52	4.40	4.31	4.24	4.19	4.15	98.2
98.1								5.08	4.76	4.56	4.43	4.34	4.27	4.22	4.18	98.1
98.0								5.15	4.81	4.61	4.47	4.37	4.30	4.24	4.20	**98.0**
97.9								5.22	4.86	4.65	4.51	4.40	4.33	4.27	4.22	97.9
97.8								5.30	4.92	4.69	4.54	4.44	4.36	4.29	4.24	97.8
97.7									4.97	4.74	4.58	4.47	4.38	4.32	4.27	97.7
97.6									5.03	4.78	4.62	4.50	4.41	4.34	4.29	97.6
97.5									5.08	4.82	4.65	4.53	4.44	4.37	4.31	97.5
97.4									5.13	4.87	4.69	4.56	4.47	4.39	4.33	97.4
97.3									5.19	4.91	4.73	4.59	4.50	4.42	4.36	97.3
97.2									5.24	4.95	4.76	4.63	4.52	4.44	4.38	97.2
97.1									5.30	5.00	4.80	4.66	4.55	4.47	4.40	97.1
97.0										5.04	4.84	4.69	4.58	4.49	4.43	**97.0**
96.9										5.09	4.87	4.72	4.61	4.52	4.45	96.9
96.8										5.13	4.91	4.75	4.64	4.54	4.47	96.8
96.7										5.17	4.95	4.79	4.66	4.57	4.49	96.7
96.6										5.22	4.98	4.82	4.69	4.59	4.52	96.6
96.5										5.26	5.02	4.85	4.72	4.62	4.54	96.5
96.4											5.06	4.88	4.75	4.65	4.56	96.4
96.3											5.10	4.91	4.78	4.67	4.59	96.3
96.2											5.13	4.95	4.81	4.70	4.61	96.2
96.1											5.17	4.98	4.83	4.72	4.63	96.1
96.0											5.21	5.01	4.86	4.75	4.66	**96.0**
95.9											5.25	5.04	4.89	4.77	4.68	95.9
95.8												5.07	4.92	4.80	4.70	95.8
95.7												5.11	4.95	4.82	4.73	95.7
95.6												5.14	4.98	4.85	4.75	95.6
95.5												5.17	5.00	4.88	4.77	95.5
95.4												5.20	5.03	4.90	4.80	95.4
95.3												5.24	5.06	4.93	4.82	95.3
95.2												5.27	5.09	4.95	4.84	95.2
95.1													5.12	4.98	4.86	95.1
95.0													5.15	5.00	4.89	**95.0**

When the interval between the date of purchase and the due date of the next coupon is less than 6 months, the rate realized is less than the bond rate because the purchase price (par) has been increased by accrued interest.

3¾ Bond—Interest payable semi-annually

RATES OF INTEREST REALIZED

if purchased at prices indicated and held to maturity

Price	PERIOD TO RUN															Price
	1 mo.	2 mos.	4 mos.	6 mos.	8 mos.	10 mos.	1	1½	2	2½	3	3½	4	4½	5	
105.0																**105.0**
104.9																104.9
104.8																104.8
104.7																104.7
104.6																104.6
104.5																104.5
104.4																104.4
104.3																104.3
104.2																104.2
104.1																104.1
104.0																**104.0**
103.9																103.9
103.8																103.8
103.7																103.7
103.6																103.6
103.5															2.99	103.5
103.4															3.01	103.4
103.3															3.03	103.3
103.2														2.98	3.06	103.2
103.1														3.01	3.08	103.1
103.0														3.03	3.10	**103.0**
102.9														3.06	3.12	102.9
102.8													3.00	3.08	3 14	102.8
102.7													3.03	3.10	3.16	102.7
102.6													3.06	3.13	3.18	102.6
102.5												2.99	3.08	3.15	3.20	102.5
102.4												3.02	3.11	3.17	3.23	102.4
102.3												3.05	3.13	3.20	3.25	102.3
102.2											2.98	3.08	3.16	3.22	3.27	102.2
102.1											3.01	3.11	3.19	3.24	3.29	102.1
102.0											3.05	3.14	3.21	3.27	3.31	**102.0**
101.9											3.08	3.17	3.24	3.29	3.33	101.9
101.8										3.00	3.12	3.20	3.27	3.32	3.36	101.8
101.7										3.04	3.15	3.23	3.29	3.34	3.38	101.7
101.6										3.08	3.19	3.26	3.32	3.36	3.40	101.6
101.5									2.97	3.12	3.22	3.29	3.35	3.39	3.42	101.5
101.4									3.02	3.16	3.26	3.32	3.37	3.41	3.44	101.4
101.3									3.08	3.21	3.29	3.35	3.40	3.44	3.46	101.3
101.2									3.13	3.25	3.33	3.38	3.43	3.46	3.49	101.2
101.1								2.99	3.18	3.29	3.36	3.41	3.45	3.48	3.51	101.1
101.0								3.06	3.23	3.33	3.40	3.44	3.48	3.51	3.53	**101.0**
100.9								3.13	3.28	3.37	3.43	3.47	3.51	3.53	3.55	100.9
100.8							2.93	3.20	3.33	3.41	3 47	3.50	3.53	3.56	3.57	100.8
100.7						2.89	3.03	3.27	3.39	3.46	3.50	3.54	3.56	3.58	3.60	100.7
100.6						3.01	3.14	3.34	3.44	3.50	3.54	3.57	3.59	3.60	3.62	100.6
100.5					2.98	3.13	3.24	3.41	3.49	3.54	3.57	3.60	3.61	3.63	3.64	100.5
100.4				2.94	3.13	3.26	3.34	3.47	3.54	3.58	3.61	3.63	3.64	3.65	3.66	100.4
100.3			2.83	3.14	3.29	3.38	3.44	3.54	3.59	3.62	3.64	3.66	3.67	3.68	3.68	100.3
100.2		2.52	3.13	3.34	3.44	3.50	3.55	3.61	3.65	3.67	3.68	3.69	3.70	3.70	3.71	100.2
100.1	2.52	3.12	3.43	3.55	3.59	3.62	3.65	3.68	3.70	3.71	3.71	3.72	3.72	3.73	3.73	100.1
100.0	3*72	3*73	3*74	3.75	3*74	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75	**100.0**

When the interval between the date of purchase and the due date of the next coupon is less than 6 months, the rate realized is less than the bond rate because the purchase price (par) has been increased by accrued interest.

4% Bond—Interest payable semi-annually
RATES OF INTEREST REALIZED
if purchased at prices indicated and held to maturity

Price	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	Price
	YEARS TO RUN															
100.0	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	**100.0**
99.9	4.02	4.02	4.02	4.02	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	99.9
99.8	4.04	4.04	4.03	4.03	4.03	4.03	4.03	4.03	4.02	4.02	4.02	4.02	4.02	4.02	4.02	99.8
99.7	4.06	4.05	4.05	4.05	4.04	4.04	4.04	4.04	4.04	4.04	4.03	4.03	4.03	4.03	4.03	99.7
99.6	4.08	4.07	4.07	4.06	4.06	4.06	4.05	4.05	4.05	4.05	4.05	4.04	4.04	4.04	4.04	99.6
99.5	4.10	4.09	4.08	4.08	4.07	4.07	4.07	4.06	4.06	4.06	4.06	4.06	4.05	4.05	4.05	99.5
99.4	4.11	4.11	4.10	4.09	4.09	4.08	4.08	4.08	4.07	4.07	4.07	4.07	4.06	4.06	4.06	99.4
99.3	4.13	4.12	4.12	4.11	4.10	4.10	4.09	4.09	4.09	4.08	4.08	4.08	4.07	4.07	4.07	99.3
99.2	4.15	4.14	4.13	4.12	4.12	4.11	4.11	4.10	4.10	4.09	4.09	4.09	4.08	4.08	4.08	99.2
99.1	4.17	4.16	4.15	4.14	4.13	4.13	4.12	4.12	4.11	4.11	4.10	4.10	4.10	4.09	4.09	99.1
99.0	4.19	4.18	4.17	4.16	4.15	4.14	4.13	4.13	4.12	4.12	4.11	4.11	4.11	4.10	4.10	**99.0**
98.9	4.21	4.20	4.18	4.17	4.16	4.15	4.15	4.14	4.13	4.13	4.13	4.12	4.12	4.11	4.11	98.9
98.8	4.23	4.21	4.20	4.19	4.18	4.17	4.16	4.15	4.15	4.14	4.14	4.13	4.13	4.12	4.12	98.8
98.7	4.25	4.23	4.22	4.20	4.19	4.18	4.17	4.17	4.16	4.15	4.15	4.14	4.14	4.13	4.13	98.7
98.6	4.27	4.25	4.23	4.22	4.21	4.20	4.19	4.18	4.17	4.17	4.16	4.15	4.15	4.14	4.14	98.6
98.5	4.29	4.27	4.25	4.24	4.22	4.21	4.20	4.19	4.19	4.18	4.17	4.17	4.16	4.16	4.15	98.5
98.4	4.31	4.29	4.27	4.25	4.24	4.23	4.22	4.21	4.20	4.19	4.18	4.18	4.17	4.17	4.16	98.4
98.3	4.32	4.30	4.29	4.27	4.25	4.24	4.23	4.22	4.21	4.20	4.20	4.19	4.18	4.18	4.17	98.3
98.2	4.34	4.32	4.30	4.28	4.27	4.25	4.24	4.23	4.22	4.21	4.21	4.20	4.19	4.19	4.18	98.2
98.1	4.36	4.34	4.32	4.30	4.28	4.27	4.26	4.25	4.24	4.23	4.22	4.21	4.20	4.20	4.19	98.1
98.0	4.38	4.36	4.34	4.31	4.30	4.28	4.27	4.26	4.25	4.24	4.23	4.22	4.21	4.21	4.20	**98.0**
97.9	4.40	4.38	4.35	4.33	4.31	4.30	4.28	4.27	4.26	4.25	4.24	4.23	4.23	4.22	4.21	97.9
97.8	4.42	4.39	4.37	4.35	4.33	4.31	4.30	4.28	4.27	4.26	4.25	4.24	4.24	4.23	4.22	97.8
97.7	4.44	4.41	4.39	4.36	4.34	4.33	4.31	4.30	4.29	4.27	4.27	4.26	4.25	4.24	4.23	97.7
97.6	4.46	4.43	4.40	4.38	4.36	4.34	4.33	4.31	4.30	4.29	4.28	4.27	4.26	4.25	4.24	97.6
97.5	4.48	4.45	4.42	4.40	4.37	4.35	4.34	4.32	4.31	4.30	4.29	4.28	4.27	4.26	4.25	97.5
97.4	4.50	4.47	4.44	4.41	4.39	4.37	4.35	4.34	4.32	4.31	4.30	4.29	4.28	4.27	4.26	97.4
97.3	4.52	4.48	4.45	4.43	4.40	4.38	4.37	4.35	4.34	4.32	4.31	4.30	4.29	4.28	4.27	97.3
97.2	4.54	4.50	4.47	4.44	4.42	4.40	4.38	4.36	4.35	4.34	4.32	4.31	4.30	4.29	4.28	97.2
97.1	4.56	4.52	4.49	4.46	4.43	4.41	4.39	4.38	4.36	4.35	4.34	4.32	4.31	4.30	4.29	97.1
97.0	4.58	4.54	4.50	4.48	4.45	4.43	4.41	4.39	4.37	4.36	4.35	4.34	4.32	4.31	4.30	**97.0**
96.9	4.60	4.56	4.52	4.49	4.47	4.44	4.42	4.40	4.39	4.37	4.36	4.35	4.34	4.32	4.31	96.9
96.8	4.62	4.57	4.54	4.51	4.48	4.46	4.44	4.42	4.40	4.38	4.37	4.36	4.35	4.34	4.32	96.8
96.7	4.64	4.59	4.56	4.52	4.50	4.47	4.45	4.43	4.41	4.40	4.38	4.37	4.36	4.35	4.34	96.7
96.6	4.66	4.61	4.57	4.54	4.51	4.49	4.46	4.44	4.43	4.41	4.40	4.38	4.37	4.36	4.35	96.6
96.5	4.68	4.63	4.59	4.56	4.53	4.50	4.48	4.46	4.44	4.42	4.41	4.39	4.38	4.37	4.36	96.5
96.4	4.70	4.65	4.61	4.57	4.54	4.51	4.49	4.47	4.45	4.43	4.42	4.40	4.39	4.38	4.37	96.4
96.3	4.72	4.67	4.62	4.59	4.56	4.53	4.51	4.48	4.46	4.45	4.43	4.42	4.40	4.39	4.38	96.3
96.2	4.73	4.69	4.64	4.60	4.57	4.54	4.52	4.50	4.48	4.46	4.44	4.43	4.41	4.40	4.39	96.2
96.1	4.75	4.70	4.66	4.62	4.59	4.56	4.53	4.51	4.49	4.47	4.45	4.44	4.42	4.41	4.40	96.1
96.0	4.77	4.72	4.68	4.64	4.60	4.57	4.55	4.52	4.50	4.48	4.47	4.45	4.43	4.42	4.41	**96.0**
95.9	4.79	4.74	4.69	4.65	4.62	4.59	4.56	4.54	4.51	4.50	4.48	4.46	4.45	4.43	4.42	95.9
95.8	4.81	4.76	4.71	4.67	4.63	4.60	4.58	4.55	4.53	4.51	4.49	4.47	4.46	4.44	4.43	95.8
95.7	4.83	4.78	4.73	4.69	4.65	4.62	4.59	4.56	4.54	4.52	4.50	4.48	4.47	4.45	4.44	95.7
95.6	4.85	4.80	4.75	4.70	4.66	4.63	4.60	4.58	4.55	4.53	4.51	4.50	4.48	4.46	4.45	95.6
95.5	4.87	4.81	4.76	4.72	4.68	4.65	4.62	4.59	4.57	4.55	4.53	4.51	4.49	4.47	4.46	95.5
95.4	4.89	4.83	4.78	4.74	4.70	4.66	4.63	4.60	4.58	4.56	4.54	4.52	4.50	4.48	4.47	95.4
95.3	4.91	4.85	4.80	4.75	4.71	4.68	4.65	4.62	4.59	4.57	4.55	4.53	4.51	4.50	4.48	95.3
95.2	4.93	4.87	4.82	4.77	4.73	4.69	4.66	4.63	4.60	4.58	4.56	4.54	5.52	4.51	4.49	95.2
95.1	4.95	4.89	4.83	4.79	4.74	4.71	4.67	4.64	4.62	4.59	4.57	4.55	4.53	4.52	4.50	95.1
95.0	4.97	4.91	4.85	4.80	4.76	4.72	4.69	4.66	4.63	4.61	4.58	4.56	4.55	4.53	4.51	**95.0**

4% Bond—Interest payable semi-annually

RATES OF INTEREST REALIZED

if purchased at prices indicated and held to maturity

Price	YEARS TO RUN 21	21½	22	22½	23	23½	24	24½	25	25½	26	26½	27	27½	28	Price
100.0	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	**100.0**
99.9	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	99.9
99.8	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	4.01	99.8
99.7	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	99.7
99.6	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.02	4.02	4.02	99.6
99.5	4.04	4.04	4.04	4.04	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	99.5
99.4	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	4.04	99.4
99.3	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.04	4.04	4.04	4.04	4.04	4.04	4.04	99.3
99.2	4.06	4.06	4.06	4.06	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	4.05	99.2
99.1	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	99.1
89.0	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.06	4.06	4.06	4.06	4.06	4.06	4.06	**99.0**
98.9	4.08	4.08	4.08	4.08	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	4.07	98.9
98.8	4.09	4.09	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.07	4.07	4.07	98.8
98.7	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.08	4.08	4.08	4.08	4.08	4.08	4.08	98.7
98.6	4.10	4.10	4.10	4.10	4.10	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	4.09	98.6
98.5	4.11	4.11	4.11	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.09	4.09	4.09	98.5
98.4	4.12	4.11	4.11	4.11	4.11	4.11	4.11	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	98.4
98.3	4.12	4.12	4.12	4.12	4.12	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.10	98.3
98.2	4.13	4.13	4.13	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.11	4.11	4.11	4.11	98.2
98.1	4.14	4.14	4.13	4.13	4.13	4.13	4.13	4.12	4.12	4.12	4.12	4.12	4.12	4.12	4.12	98.1
98.0	4.14	4.14	4.14	4.14	4.14	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.13	4.12	4.12	**98.0**
97.9	4.15	4.15	4.15	4.15	4.14	4.14	4.14	4.14	4.13	4.13	4.13	4.13	4.13	4.13	4.13	97.9
97.8	4.16	4.16	4.15	4.15	4.15	4.15	4.15	4.14	4.14	4.14	4.14	4.14	4.14	4.14	4.13	97.8
97.7	4.17	4.16	4.16	4.16	4.16	4.15	4.15	4.15	4.15	4.15	4.15	4.14	4.14	4.14	4.14	97.7
97.6	4.17	4.17	4.17	4.17	4.16	4.16	4.16	4.16	4.15	4.15	4.15	4.15	4.15	4.15	4.15	97.6
97.5	4.18	4.18	4.18	4.17	4.17	4.17	4.17	4.16	4.16	4.16	4.16	4.16	4.16	4.16	4.15	97.5
97.4	4.19	4.18	4.18	4.18	4.18	4.17	4.17	4.17	4.17	4.17	4.17	4.16	4.16	4.16	4.16	97.4
97.3	4.19	4.19	4.19	4.19	4.18	4.18	4.18	4.18	4.17	4.17	4.17	4.17	4.17	4.17	4.17	97.3
97.2	4.20	4.20	4.20	4.19	4.19	4.19	4.18	4.18	4.18	4.18	4.18	4.18	4.17	4.17	4.17	97.2
97.1	4.21	4.21	4.20	4.20	4.20	4.19	4.19	4.19	4.19	4.19	4.18	4.18	4.18	4.18	4.18	97.1
97.0	4.22	4.21	4.21	4.21	4.20	4.20	4.20	4.20	4.19	4.19	4.19	4.19	4.19	4.19	4.18	**97.0**
96.9	4.22	4.22	4.22	4.22	4.21	4.21	4.20	4.20	4.20	4.20	4.20	4.19	4.19	4.19	4.19	96.9
96.8	4.23	4.23	4.22	4.22	4.22	4.21	4.21	4.21	4.21	4.21	4.20	4.20	4.20	4.20	4.20	96.8
96.7	4.24	4.23	4.23	4.23	4.23	4.22	4.22	4.22	4.21	4.21	4.21	4.21	4.21	4.20	4.20	96.7
96.6	4.25	4.24	4.24	4.24	4.23	4.23	4.23	4.22	4.22	4.22	4.22	4.21	4.21	4.21	4.21	96.6
96.5	4.25	4.25	4.25	4.24	4.24	4.24	4.23	4.23	4.23	4.23	4.22	4.22	4.22	4.22	4.22	96.5
96.4	4.26	4.26	4.25	4.25	4.25	4.24	4.24	4.24	4.23	4.23	4.23	4.23	4.22	4.22	4.22	96.4
96.3	4.27	4.26	4.26	4.26	4.25	4.25	4.25	4.24	4.24	4.24	4.23	4.23	4.23	4.23	4.23	96.3
96.2	4.28	4.27	4.27	4.26	4.26	4.26	4.25	4.25	4.25	4.24	4.24	4.24	4.24	4.24	4.23	96.2
96.1	4.28	4.28	4.27	4.27	4.27	4.26	4.26	4.26	4.26	4.25	4.25	4.25	4.24	4.24	4.24	96.1
96.0	4.29	4.29	4.28	4.28	4.27	4.27	4.27	4.26	4.26	4.26	4.26	4.25	4.25	4.25	4.25	**96.0**
95.9	4.30	4.29	4.29	4.29	4.28	4.28	4.27	4.27	4.27	4.26	4.26	4.26	4.26	4.25	4.25	95.9
95.8	4.31	4.30	4.30	4.29	4.29	4.28	4.28	4.28	4.28	4.27	4.27	4.26	4.26	4.26	4.26	95.8
95.7	4.31	4.31	4.30	4.30	4.30	4.29	4.29	4.28	4.28	4.28	4.27	4.27	4.27	4.27	4.26	95.7
95.6	4.32	4.32	4.31	4.31	4.30	4.30	4.29	4.29	4.29	4.28	4.28	4.28	4.28	4.27	4.27	95.6
95.5	4.33	4.32	4.32	4.32	4.31	4.31	4.30	4.30	4.30	4.29	4.29	4.28	4.28	4.28	4.28	95.5
95.4	4.34	4.33	4.33	4.32	4.32	4.31	4.31	4.30	4.30	4.30	4.29	4.29	4.29	4.29	4.28	95.4
95.3	4.34	4.34	4.33	4.33	4.32	4.32	4.32	4.31	4.31	4.30	4.30	4.30	4.29	4.29	4.29	95.3
95.2	4.35	4.35	4.34	4.34	4.33	4.33	4.32	4.32	4.31	4.31	4.31	4.30	4.30	4.30	4.30	95.2
95.1	4.36	4.35	4.35	4.34	4.34	4.33	4.33	4.33	4.32	4.32	4.31	4.31	4.31	4.31	4.30	95.1
95.0	4.37	4.36	4.36	4.35	4.35	4.34	4.34	4.33	4.33	4.32	4.32	4.32	4.31	4.31	4.30	**95.0**

4% Bond—Interest payable semi-annually

RATES OF INTEREST REALIZED

if purchased at prices indicated and held to maturity

Price	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	12½	13	Price
95.0	4.97	4.91	4.85	4.80	4.76	4.72	4.69	4.66	4.63	4.61	4.58	4.56	4.55	4.53	4.51	**95.0**
94.9	4.99	4.93	4.87	4.82	4.77	4.74	4.70	4.67	4.64	4.62	4.60	4.58	4.56	4.54	4.52	94.9
94.8	5.01	4.94	4.89	4.84	4.79	4.75	4.72	4.69	4.66	4.63	4.61	4.59	4.57	4.55	4.53	94.8
94.7	5.03	4.96	4.90	4.85	4.81	4.77	4.73	4.70	4.67	4.64	4.62	4.60	4.58	4.56	4.54	94.7
94.6	5.05	4.98	4.92	4.87	4.82	4.78	4.75	4.71	4.68	4.66	4.63	4.61	4.59	4.57	4.55	94.6
94.5	5.08	5.00	4.94	4.89	4.84	4.80	4.76	4.73	4.70	4.67	4.64	4.62	4.60	4.58	4.57	94.5
94.4	5.10	5.02	4.96	4.90	4.85	4.81	4.77	4.74	4.71	4.68	4.66	4.63	4.61	4.59	4.58	94.4
94.3	5.12	5.04	4.98	4.92	4.87	4.83	4.79	4.75	4.72	4.69	4.67	4.65	4.62	4.61	4.59	94.3
94.2	5.14	5.06	4.99	4.93	4.88	4.84	4.80	4.77	4.73	4.71	4.68	4.66	4.64	4.62	4.60	94.2
94.1	5.16	5.08	5.01	4.95	4.90	4.86	4.82	4.78	4.75	4.72	4.69	4.67	4.65	4.63	4.61	94.1
94.0	5.18	5.10	5.03	4.97	4.92	4.87	4.83	4.79	4.76	4.73	4.70	4.68	4.66	4.64	4.62	**94.0**
93.9	5.20	5.12	5.05	4.98	4.93	4.89	4.85	4.81	4.77	4.74	4.72	4.69	4.67	4.65	4.63	93.9
93.8	5.22	5.13	5.06	5.00	4.95	4.90	4.86	4.82	4.79	4.76	4.73	4.70	4.68	4.66	4.64	93.8
93.7	5.24	5.15	5.08	5.02	4.96	4.92	4.87	4.83	4.80	4.77	4.74	4.72	4.69	4.67	4.65	93.7
93.6	5.26	5.17	5.10	5.04	4.98	4.93	4.89	4.85	4.81	4.78	4.75	4.73	4.70	4.68	4.66	93.6
93.5		5.19	5.12	5.05	5.00	4.95	4.90	4.86	4.83	4.80	4.77	4.74	4.72	4.69	4.67	93.5
93.4		5.21	5.13	5.07	5.01	4.96	4.92	4.88	4.84	4.81	4.78	4.75	4.73	4.71	4.68	93.4
93.3		5.23	5.15	5.09	5.03	4.98	4.93	4.89	4.85	4.82	4.79	4.76	4.74	4.72	4.69	93.3
93.2		5.25	5.17	5.10	5.04	4.99	4.95	4.90	4.87	4.83	4.80	4.78	4.75	4.73	4.70	93.2
93.1			5.19	5.12	5.06	5.01	4.96	4.92	4.88	4.85	4.82	4.79	4.76	4.74	4.72	93.1
93.0			5.21	5.14	5.08	5.02	4.97	4.93	4.89	4.86	4.83	4.80	4.77	4.75	4.73	**93.0**
92.9			5.22	5.15	5.09	5.04	4.99	4.94	4.91	4.87	4.84	4.81	4.79	4.76	4.74	92.9
92.8			5.24	5.17	5.11	5.05	5.00	4.96	4.92	4.89	4.85	4.82	4.80	4.77	4.75	92.8
92.7			5.26	5.19	5.12	5.07	5.02	4.97	4.93	4.90	4.87	4.84	4.81	4.78	4.76	92.7
92.6				5.20	5.14	5.08	5.03	4.99	4.95	4.91	4.88	4.85	4.82	4.79	4.77	92.6
92.5				5.22	5.16	5.10	5.05	5.00	4.96	4.92	4.89	4.86	4.83	4.81	4.78	92.5
92.4				5.24	5.17	5.11	5.06	5.02	4.97	4.94	4.90	4.87	4.84	4.82	4.79	92.4
92.3				5.26	5.19	5.13	5.08	5.03	4.99	4.95	4.91	4.88	4.85	4.83	4.80	92.3
92.2					5.21	5.14	5.09	5.04	5.00	4.96	4.93	4.90	4.87	4.84	4.82	92.2
92.1					5.22	5.16	5.11	5.06	5.01	4.98	4.94	4.91	4.88	4.85	4.83	92.1
92.0					5.24	5.17	5.12	5.07	5.03	4.99	4.95	4.92	4.89	4.86	4.84	**92.0**
					5.25	5.19	5.14	5.09	5.04	5.00	4.96	4.93	4.90	4.87	4.85	91.9
						5.20	5.15	5.10	5.06	5.01	4.98	4.94	4.91	4.88	4.86	91.8
						5.22	5.17	5.11	5.07	5.03	4.99	4.96	4.92	4.90	4.87	91.7
						5.24	5.18	5.13	5.08	5.04	5.00	4.97	4.94	4.91	4.88	91.6
						5.25	5.20	5.14	5.10	5.05	5.02	4.98	4.95	4.92	4.89	91.5
							5.21	5.16	5.11	5.07	5.03	4.99	4.96	4.93	4.90	91.4
							5.23	5.17	5.12	5.08	5.04	5.00	4.97	4.91	4.91	91.3
							5.24	5.19	5.14	5.09	5.05	5.02	4.98	4.95	4.92	91.2
							5.26	5.20	5.15	5.11	5.07	5.03	4.99	4.96	4.94	91.1
								5.21	5.16	5.12	5.08	5.04	5.01	4.97	4.95	**91.0**
								5.23	5.18	5.13	5.09	5.05	5.02	4.99	4.96	90.9
								5.24	5.10	5.15	5.10	5.06	5.03	5.00	4.97	90.8
								5.26	5.21	5.16	5.12	5.08	5.04	5.01	4.98	90.7
									5.22	5.17	5.13	5.09	5.05	5.02	4.99	90.6
									5.23	5.19	5.14	5.10	5.07	5.03	5.00	**90.5**
									5.25	5.20	5.15	5.11	5.08	5.04	5.01	90.4
										5.21	5.17	5.13	5.09	5.06	5.03	90.3
										5.23	5.18	5.14	5.10	5.07	5.04	90.2
										5.24	5.19	5.15	5.11	5.08	5.05	90.1
										5.25	5.21	5.16	5.13	5.09	5.06	**90.0**

Rates of Interest realized above 5.25% not figured

4% Bond—Interest payable semi-annually

RATES OF INTEREST REALIZED

if purchased at prices indicated and held to maturity

Price	YEARS TO RUN 21	21½	22	22½	23	23½	24	24½	25	25½	26	26½	27	27½	28	Price
95.0	4.37	4.36	4.36	4.35	4.35	4.34	4.34	4.33	4.33	4.32	4.32	4.32	4.31	4.31	4.31	**95.0**
94.9	4.37	4.37	4.36	4.36	4.35	4.35	4.34	4.34	4.34	4.33	4.33	4.32	4.32	4.32	4.31	94.9
94.8	4.38	4.37	4.37	4.37	4.36	4.35	4.35	4.35	4.34	4.34	4.33	4.33	4.33	4.32	4.32	94.8
94.7	4.39	4.38	4.38	4.37	4.37	4.36	4.36	4.35	4.35	4.34	4.34	4.34	4.33	4.33	4.33	94.7
94.6	4.40	4.39	4.38	4.38	4.37	4.37	4.36	4.36	4.36	4.35	4.35	4.34	4.34	4.34	4.33	94.6
94.5	4.40	4.40	4.39	4.39	4.38	4.38	4.37	4.37	4.36	4.36	4.35	4.35	4.35	4.34	4.34	94.5
94.4	4.41	4.40	4.40	4.39	4.39	4.38	4.38	4.37	4.37	4.36	4.36	4.36	4.35	4.35	4.35	94.4
94.3	4.42	4.41	4.41	4.40	4.40	4.39	4.39	4.38	4.38	4.37	4.37	4.36	4.36	4.36	4.35	94.3
94.2	4.43	4.42	4.41	4.41	4.40	4.40	4.39	4.39	4.38	4.38	4.37	4.37	4.37	4.36	4.36	94.2
94.1	4.43	4.43	4.42	4.42	4.41	4.40	4.40	4.40	4.39	4.39	4.38	4.38	4.37	4.37	4.37	94.1
94.0	4.44	4.43	4.43	4.42	4.42	4.41	4.41	4.40	4.40	4.39	4.39	4.38	4.38	4.38	4.37	**94.0**
93.9	4.45	4.44	4.44	4.43	4.42	4.42	4.41	4.41	4.41	4.40	4.39	4.39	4.39	4.38	4.38	93.9
93.8	4.46	4.45	4.44	4.44	4.43	4.43	4.42	4.42	4.41	4.41	4.40	4.40	4.39	4.39	4.39	93.8
93.7	4.46	4.46	4.45	4.44	4.44	4.43	4.43	4.42	4.42	4.41	4.41	4.40	4.40	4.40	4.39	93.7
93.6	4.47	4.47	4.46	4.45	4.45	4.44	4.44	4.43	4.43	4.42	4.42	4.41	4.41	4.40	4.40	93.6
93.5	4.48	4.47	4.47	4.46	4.45	4.45	4.44	4.44	4.43	4.43	4.42	4.42	4.41	4.41	4.41	93.5
93.4	4.49	4.48	4.47	4.47	4.46	4.46	4.45	4.45	4.44	4.43	4.43	4.42	4.42	4.42	4.41	93.4
93.3	4.50	4.49	4.48	4.48	4.47	4.46	4.46	4.45	4.45	4.44	4.44	4.43	4.43	4.42	4.42	93.3
93.2	4.50	4.50	4.49	4.48	4.48	4.47	4.47	4.46	4.45	4.45	4.44	4.44	4.43	4.43	4.43	93.2
93.1	4.51	4.50	4.50	4.49	4.48	4.48	4.47	4.47	4.46	4.46	4.45	4.45	4.44	4.44	4.43	93.1
93.0	4.52	4.51	4.50	4.50	4.49	4.49	4.48	4.47	4.47	4.46	4.46	4.45	4.45	4.44	4.44	**93.0**
92.9	4.53	4.52	4.51	4.51	4.50	4.49	4.49	4.48	4.48	4.47	4.46	4.46	4.45	4.45	4.45	92.9
92.8	4.54	4.53	4.52	4.51	4.51	4.50	4.49	4.49	4.48	4.48	4.47	4.47	4.46	4.46	4.45	92.8
92.7	4.54	4.54	4.53	4.52	4.51	4.51	4.50	4.50	4.49	4.48	4.48	4.47	4.47	4.46	4.46	92.7
92.6	4.55	4.54	4.54	4.53	4.52	4.51	4.51	4.50	4.50	4.49	4.48	4.48	4.47	4.47	4.47	92.6
92.5	4.56	4.55	4.54	4.54	4.53	4.52	4.52	4.51	4.50	4.50	4.49	4.49	4.48	4.48	4.47	92.5
92.4	4.57	4.56	4.55	4.54	4.54	4.53	4.52	4.52	4.51	4.50	4.50	4.49	4.49	4.48	4.48	92.4
92.3	4.58	4.57	4.56	4.55	4.54	4.54	4.53	4.52	4.52	4.51	4.51	4.50	4.49	4.49	4.48	92.3
92.2	4.58	4.58	4.57	4.56	4.55	4.54	4.54	4.53	4.52	4.52	4.51	4.51	4.50	4.50	4.49	92.2
92.1	4.59	4.58	4.58	4.56	4.56	4.55	4.54	4.54	4.53	4.53	4.52	4.51	4.51	4.50	4.50	92.1
92.0	4.60	4.59	4.58	4.57	4.56	4.56	4.55	4.54	4.54	4.53	4.53	4.52	4.51	4.51	4.50	**92.0**
91.9	4.61	4.60	4.59	4.58	4.57	4.56	4.56	4.55	4.55	4.54	4.53	4.53	4.52	4.52	4.51	91.9
91.8	4.62	4.61	4.60	4.59	4.58	4.57	4.57	4.56	4.55	4.55	4.54	4.53	4.53	4.52	4.52	91.8
91.7	4.62	4.61	4.61	4.60	4.59	4.58	4.57	4.57	4.56	4.55	4.55	4.54	4.54	4.53	4.52	91.7
91.6	4.63	4.62	4.61	4.60	4.60	4.59	4.58	4.57	4.57	4.56	4.55	4.55	4.54	4.54	4.53	91.6
91.5	4.64	4.63	4.62	4.61	4.60	4.60	4.59	4.58	4.57	4.57	4.56	4.56	4.55	4.54	4.54	91.5
91.4	4.65	4.64	4.63	4.62	4.61	4.60	4.60	4.59	4.58	4.57	4.57	4.56	4.56	4.55	4.54	91.4
91.3	4.65	4.65	4.64	4.63	4.62	4.61	4.60	4.60	4.59	4.58	4.58	4.57	4.56	4.56	4.55	91.3
91.2	4.66	4.65	4.64	4.63	4.63	4.62	4.61	4.60	4.60	4.59	4.58	4.58	4.57	4.56	4.56	91.2
91.1	4.67	4.66	4.65	4.64	4.63	4.63	4.62	4.61	4.60	4.60	4.59	4.58	4.58	4.57	4.57	91.1
91.0	4.68	4.67	4.66	4.65	4.64	4.63	4.63	4.62	4.61	4.60	4.60	4.59	4.58	4.58	4.57	**91.0**
90.9	4.69	4.68	4.67	4.66	4.65	4.64	4.63	4.63	4.62	4.61	4.60	4.60	4.59	4.59	4.58	90.9
90.8	4.69	4.68	4.67	4.67	4.66	4.65	4.64	4.63	4.62	4.62	4.61	4.60	4.60	4.59	4.59	90.8
90.7	4.70	4.69	4.68	4.67	4.66	4.66	4.65	4.64	4.63	4.62	4.62	4.61	4.61	4.60	4.59	90.7
90.6	4.71	4.70	4.69	4.68	4.67	4.66	4.66	4.65	4.64	4.63	4.62	4.62	4.61	4.61	4.60	90.6
90.5	4.72	4.71	4.70	4.69	4.68	4.67	4.66	4.66	4.65	4.64	4.63	4.63	4.62	4.61	4.61	90.5
90.4	4.73	4.71	4.70	4.70	4.69	4.68	4.67	4.66	4.65	4.65	4.64	4.63	4.63	4.62	4.61	90.4
90.3	4.73	4.72	4.71	4.70	4.69	4.69	4.68	4.67	4.66	4.65	4.65	4.64	4.63	4.63	4.62	90.3
90.2	4.74	4.73	4.72	4.71	4.70	4.69	4.69	4.68	4.67	4.66	4.65	4.65	4.64	4.63	4.63	90.2
90.1	4.75	4.74	4.73	4.72	4.71	4.70	4.69	4.68	4.68	4.67	4.66	4.65	4.65	4.64	4.64	90.1
90.0	4.76	4.75	4.74	4.73	4.72	4.71	4.70	4.69	4.68	4.68	4.67	4.66	4.65	4.65	4.64	**90.0**

$4\frac{1}{4}\%$ Bond—Interest payable semi-annually

RATES OF INTEREST REALIZED

if purchased at prices indicated and held to maturity

Price	YEARS TO RUN 8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	Price
100.0	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	100.0
99.9	4.27	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	99.9
99.8	4.28	4.28	4.28	4.28	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	99.8
99.7	4.30	4.29	4.29	4.29	4.29	4.29	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	99.7
99.6	4.31	4.31	4.30	4.30	4.30	4.30	4.30	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	99.6
99.5	4.33	4.32	4.32	4.32	4.31	4.31	4.31	4.31	4.30	4.30	4.30	4.30	4.30	4.30	4.30	99.5
99.4	4.34	4.34	4.33	4.33	4.32	4.32	4.32	4.32	4.31	4.31	4.31	4.31	4.31	4.31	4.31	99.4
99.3	4.36	4.35	4.35	4.34	4.34	4.33	4.33	4.33	4.33	4.32	4.32	4.32	4.32	4.32	4.31	99.3
99.2	4.37	4.36	4.36	4.35	4.35	4.35	4.34	4.34	4.34	4.33	4.33	4.33	4.33	4.33	4.32	99.2
99.1	4.39	4.38	4.37	4.37	4.36	4.36	4.35	4.35	4.35	4.34	4.34	4.34	4.34	4.33	4.33	99.1
99.0	4.40	4.39	4.39	4.38	4.37	4.37	4.37	4.36	4.36	4.35	4.35	4.35	4.35	4.34	4.34	99.0
98.9	4.42	4.41	4.40	4.39	4.39	4.38	4.38	4.37	4.37	4.36	4.36	4.36	4.36	4.35	4.35	98.9
98.8	4.43	4.42	4.41	4.41	4.40	4.39	4.39	4.38	4.38	4.38	4.37	4.37	4.37	4.36	4.36	98.8
98.7	4.45	4.44	4.43	4.42	4.41	4.41	4.40	4.40	4.39	4.39	4.38	4.38	4.37	4.37	4.37	98.7
98.6	4.46	4.45	4.44	4.43	4.42	4.42	4.41	4.41	4.40	4.40	4.39	4.39	4.38	4.38	4.38	98.6
98.5	4.48	4.46	4.46	4.45	4.44	4.43	4.42	4.42	4.41	4.41	4.40	4.40	4.39	4.39	4.39	98.5
98.4	4.49	4.48	4.47	4.46	4.45	4.44	4.44	4.43	4.42	4.42	4.41	4.41	4.40	4.40	4.40	98.4
98.3	4.51	4.49	4.48	4.47	4.46	4.45	4.45	4.44	4.43	4.43	4.42	4.42	4.41	4.41	4.41	98.3
98.2	4.52	4.51	4.50	4.49	4.47	4.47	4.46	4.45	4.44	4.44	4.43	4.43	4.42	4.42	4.42	98.2
98.1	4.54	4.52	4.51	4.50	4.49	4.48	4.47	4.46	4.46	4.45	4.44	4.44	4.43	4.43	4.42	98.1
98.0	4.55	4.54	4.52	4.51	4.50	4.49	4.48	4.47	4.47	4.46	4.45	4.45	4.44	4.44	4.43	98.0
97.9	4.57	4.55	4.54	4.53	4.51	4.50	4.49	4.49	4.48	4.47	4.46	4.46	4.45	4.45	4.44	97.9
97.8	4.58	4.57	4.55	4.54	4.53	4.51	4.51	4.50	4.49	4.48	4.47	4.47	4.46	4.46	4.45	97.8
97.7	4.60	4.58	4.57	4.55	4.54	4.53	4.52	4.51	4.50	4.49	4.49	4.48	4.47	4.47	4.46	97.7
97.6	4.61	4.59	4.58	4.56	4.55	4.54	4.53	4.52	4.51	4.50	4.50	4.49	4.48	4.48	4.47	97.6
97.5	4.63	4.61	4.59	4.58	4.56	4.55	4.54	4.53	4.52	4.51	4.51	4.50	4.49	4.49	4.48	97.5
97.4	4.64	4.62	4.61	4.59	4.58	4.56	4.55	4.54	4.53	4.52	4.52	4.51	4.50	4.50	4.49	97.4
97.3	4.66	4.64	4.62	4.60	4.59	4.58	4.56	4.55	4.54	4.54	4.53	4.52	4.51	4.51	4.50	97.3
97.2	4.67	4.65	4.63	4.62	4.60	4.59	4.57	4.56	4.55	4.55	4.54	4.53	4.52	4.51	4.51	97.2
97.1	4.69	4.67	4.65	4.63	4.62	4.60	4.59	4.57	4.57	4.56	4.55	4.54	4.53	4.52	4.52	97.1
97.0	4.70	4.68	4.66	4.64	4.63	4.61	4.60	4.59	4.58	4.57	4.56	4.55	4.54	4.53	4.53	97.0
96.9	4.72	4.70	4.68	4.66	4.64	4.62	4.61	4.60	4.59	4.58	4.57	4.56	4.55	4.54	4.54	96.9
96.8	4.74	4.71	4.69	4.67	4.65	4.64	4.62	4.61	4.60	4.59	4.58	4.57	4.56	4.55	4.55	96.8
96.7	4.75	4.73	4.70	4.68	4.67	4.65	4.63	4.62	4.61	4.60	4.59	4.58	4.57	4.56	4.56	96.7
96.6	4.77	4.74	4.72	4.70	4.68	4.66	4.65	4.63	4.62	4.61	4.60	4.59	4.58	4.57	4.57	96.6
96.5	4.78	4.76	4.73	4.71	4.69	4.68	4.66	4.65	4.63	4.62	4.61	4.60	4.59	4.58	4.58	96.5
96.4	4.80	4.77	4.75	4.72	4.71	4.69	4.67	4.66	4.64	4.63	4.62	4.61	4.60	4.59	4.59	96.4
96.3	4.81	4.79	4.76	4.74	4.72	4.70	4.68	4.67	4.66	4.64	4.63	4.62	4.61	4.60	4.60	96.3
96.2	4.83	4.80	4.77	4.75	4.73	4.71	4.70	4.68	4.67	4.65	4.64	4.63	4.62	4.61	4.60	96.2
96.1	4.84	4.82	4.79	4.76	4.75	4.73	4.71	4.69	4.68	4.67	4.65	4.64	4.63	4.62	4.61	96.1
96.0	4.86	4.83	4.80	4.78	4.76	4.74	4.72	4.70	4.69	4.68	4.66	4.65	4.64	4.63	4.62	96.0
95.9	4.88	4.84	4.82	4.79	4.77	4.75	4.73	4.72	4.70	4.69	4.67	4.66	4.65	4.64	4.63	95.9
95.8	4.89	4.86	4.83	4.81	4.78	4.76	4.74	4.73	4.71	4.70	4.69	4.67	4.66	4.65	4.64	95.8
95.7	4.91	4.87	4.84	4.82	4.80	4.78	4.76	4.74	4.72	4.71	4.70	4.68	4.67	4.66	4.65	95.7
95.6	4.92	4.89	4.86	4.83	4.81	4.79	4.77	4.75	4.74	4.72	4.71	4.69	4.68	4.67	4.66	95.6
95.5	4.94	4.90	4.87	4.85	4.82	4.80	4.78	4.76	4.75	4.73	4.72	4.70	4.69	4.68	4.67	95.5
95.4	4.95	4.92	4.89	4.86	4.84	4.81	4.79	4.77	4.76	4.74	4.73	4.71	4.70	4.69	4.68	95.4
95.3	4.97	4.93	4.90	4.87	4.85	4.83	4.81	4.79	4.77	4.75	4.74	4.72	4.71	4.70	4.69	95.3
95.2	4.98	4.95	4.92	4.89	4.86	4.84	4.82	4.80	4.78	4.76	4.75	4.74	4.72	4.71	4.70	95.2
95.1	5.00	4.96	4.93	4.90	4.88	4.85	4.83	4.81	4.79	4.78	4.76	4.75	4.73	4.72	4.71	95.1
95.0	5.02	4.98	4.94	4.91	4.89	4.86	4.84	4.82	4.80	4.79	4.77	4.76	4.74	4.73	4.72	95.0

4¼% Bond—Interest payable semi-annually
RATES OF INTEREST REALIZED
if purchased at prices indicated and held to maturity

Price	YEARS TO RUN															Price
	15½	16	16½	17	17½	18	18½	19	19½	20	20½	21	21½	22	22½	
100.0	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	**100.0**
99.9	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	99.9
99.8	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.26	4.26	4.26	4.26	4.26	99.8
99.7	4.28	4.28	4.28	4.28	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	99.7
99.6	4.29	4.29	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	99.6
99.5	4.30	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	99.5
99.4	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.29	4.29	4.29	4.29	4.29	99.4
99.3	4.31	4.31	4.31	4.31	4.31	4.31	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	99.3
99.2	4.32	4.32	4.32	4.32	4.32	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	99.2
99.1	4.33	4.33	4.33	4.33	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.31	4.31	4.31	99.1
99.0	4.34	4.34	4.34	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.32	4.32	4.32	4.32	4.32	**99.0**
98.9	4.35	4.35	4.34	4.34	4.34	4.34	4.34	4.34	4.33	4.33	4.33	4.33	4.33	4.33	4.33	98.9
98.8	4.36	4.36	4.35	4.35	4.35	4.35	4.34	4.34	4.34	4.34	4.34	4.34	4.34	4.34	4.33	98.8
98.7	4.37	4.36	4.36	4.36	4.36	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.34	4.34	4.34	98.7
98.6	4.38	4.37	4.37	4.37	4.37	4.36	4.36	4.36	4.36	4.36	4.35	4.35	4.35	4.35	4.35	98.6
98.5	4.39	4.38	4.38	4.38	4.37	4.37	4.37	4.37	4.37	4.36	4.36	4.36	4.36	4.36	4.36	98.5
98.4	4.39	4.39	4.39	4.38	4.38	4.38	4.38	4.37	4.37	4.37	4.37	4.37	4.37	4.36	4.36	98.4
98.3	4.40	4.40	4.40	4.39	4.39	4.39	4.38	4.38	4.38	4.38	4.38	4.37	4.37	4.37	4.37	98.3
98.2	4.41	4.41	4.40	4.40	4.40	4.40	4.39	4.39	4.39	4.39	4.38	4.38	4.38	4.38	4.38	98.2
98.1	4.42	4.42	4.41	4.41	4.41	4.40	4.40	4.40	4.40	4.39	4.39	4.39	4.39	4.39	4.38	98.1
98.0	4.43	4.43	4.42	4.42	4.42	4.41	4.41	4.41	4.40	4.40	4.40	4.40	4.39	4.39	4.39	**98.0**
97.9	4.44	4.44	4.43	4.43	4.42	4.42	4.42	4.41	4.41	4.41	4.41	4.40	4.40	4.40	4.40	97.9
97.8	4.45	4.44	4.44	4.44	4.43	4.43	4.42	4.42	4.42	4.42	4.41	4.41	4.41	4.41	4.40	97.8
97.7	4.46	4.45	4.45	4.44	4.44	4.44	4.43	4.43	4.43	4.42	4.42	4.42	4.42	4.41	4.41	97.7
97.6	4.47	4.46	4.46	4.45	4.45	4.44	4.44	4.44	4.44	4.43	4.43	4.43	4.42	4.42	4.42	97.6
97.5	4.48	4.47	4.47	4.46	4.46	4.45	4.45	4.45	4.44	4.44	4.44	4.43	4.43	4.43	4.43	97.5
97.4	4.49	4.48	4.47	4.47	4.47	4.46	4.46	4.45	4.45	4.45	4.44	4.44	4.44	4.44	4.43	97.4
97.3	4.49	4.49	4.48	4.48	4.47	4.47	4.47	4.46	4.46	4.46	4.45	4.45	4.44	4.44	4.44	97.3
97.2	4.50	4.50	4.49	4.49	4.48	4.48	4.47	4.47	4.47	4.46	4.46	4.46	4.45	4.45	4.45	97.2
97.1	4.51	4.51	4.50	4.50	4.49	4.49	4.48	4.48	4.47	4.47	4.47	4.46	4.46	4.46	4.45	97.1
97.0	4.52	4.52	4.51	4.50	4.50	4.49	4.49	4.49	4.48	4.48	4.47	4.47	4.47	4.46	4.46	**97.0**
96.9	4.53	4.53	4.52	4.51	4.51	4.50	4.50	4.49	4.49	4.49	4.48	4.48	4.47	4.47	4.47	96.9
96.8	4.54	4.53	4.53	4.52	4.52	4.51	4.51	4.50	4.50	4.49	4.49	4.49	4.48	4.48	4.48	96.8
96.7	4.55	4.54	4.54	4.53	4.53	4.52	4.51	4.51	4.51	4.50	4.50	4.49	4.49	4.49	4.48	96.7
96.6	4.56	4.55	4.55	4.54	4.53	4.53	4.52	4.52	4.51	4.51	4.51	4.50	4.50	4.49	4.49	96.6
96.5	4.57	4.56	4.56	4.55	4.54	4.54	4.53	4.53	4.52	4.52	4.51	4.51	4.51	4.50	4.50	96.5
96.4	4.58	4.57	4.56	4.56	4.55	4.54	4.54	4.53	4.53	4.52	4.52	4.52	4.51	4.51	4.51	96.4
96.3	4.59	4.58	4.57	4.57	4.56	4.55	4.55	4.54	4.54	4.53	4.53	4.52	4.52	4.52	4.51	96.3
96.2	4.60	4.59	4.58	4.57	4.57	4.56	4.56	4.55	4.54	4.54	4.54	4.53	4.53	4.52	4.52	96.2
96.1	4.61	4.60	4.59	4.58	4.58	4.57	4.56	4.56	4.55	4.55	4.54	4.54	4.54	4.53	4.53	96.1
96.0	4.62	4.61	4.60	4.59	4.58	4.58	4.57	4.57	4.56	4.56	4.55	4.55	4.54	4.54	4.54	**96.0**
95.9	4.63	4.62	4.61	4.60	4.59	4.59	4.58	4.57	4.57	4.56	4.56	4.56	4.55	4.55	4.54	95.9
95.8	4.63	4.63	4.62	4.61	4.60	4.60	4.59	4.58	4.58	4.57	4.57	4.56	4.56	4.55	4.55	95.8
95.7	4.64	4.64	4.63	4.62	4.61	4.60	4.60	4.59	4.58	4.58	4.58	4.57	4.57	4.56	4.56	95.7
95.6	4.65	4.64	4.64	4.63	4.62	4.61	4.61	4.60	4.59	4.59	4.58	4.58	4.57	4.57	4.57	95.6
95.5	4.66	4.65	4.64	4.64	4.63	4.62	4.61	4.61	4.60	4.60	4.59	4.59	4.58	4.58	4.57	95.5
95.4	4.67	4.66	4.65	4.64	4.64	4.63	4.62	4.62	4.61	4.60	4.60	4.59	4.59	4.58	4.58	95.4
95.3	4.68	4.67	4.66	4.65	4.65	4.64	4.63	4.62	4.62	4.61	4.61	4.60	4.60	4.59	4.59	95.3
95.2	4.69	4.68	4.67	4.66	4.65	4.65	4.64	4.63	4.63	4.62	4.61	4.61	4.60	4.60	4.60	95.2
95.1	4.70	4.69	4.68	4.67	4.66	4.66	4.65	4.64	4.63	4.63	4.62	4.62	4.61	4.61	4.60	95.1
95.0	4.71	4.70	4.69	4.68	4.67	4.66	4.66	4.65	4.64	4.64	4.63	4.62	4.62	4.61	4.61	**95.0**

4¼% Bond—Interest payable semi-annually

RATES OF INTEREST REALIZED

if purchased at prices indicated and held to maturity

Price	23	23½	24	24½	25	25½	26	26½	27	27½	28	28½	29	29½	30	Price
	YEARS TO RUN															
100.0	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	4.25	**100.0**
99.9	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	99.9
99.8	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	4.26	99.8
99.7	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	99.7
99.6	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.27	4.27	4.27	4.27	4.27	4.27	4.27	4.27	99.6
99.5	4.29	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	99.5
99.4	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	99.4
99.3	4.30	4.30	4.30	4.30	4.30	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	4.29	99.3
99.2	4.31	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	4.30	99.2
99.1	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.30	4.30	4.30	4.30	99.1
99.0	4.32	4.32	4.32	4.32	4.32	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	4.31	**99.0**
98.9	4.33	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32	98.9
98.8	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.32	4.32	4.32	4.32	4.32	4.32	98.8
98.7	4.34	4.34	4.34	4.34	4.34	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	98.7
98.6	4.35	4.35	4.34	4.34	4.34	4.34	4.34	4.34	4.34	4.34	4.34	4.34	4.34	4.33	4.33	98.6
98.5	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.34	4.34	4.34	4.34	4.34	4.34	98.5
98.4	4.36	4.36	4.36	4.36	4.36	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	98.4
98.3	4.37	4.37	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.35	4.35	4.35	4.35	98.3
98.2	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.36	4.36	4.36	4.36	4.36	4.36	4.36	4.36	98.2
98.1	4.38	4.38	4.38	4.38	4.38	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.37	4.36	98.1
98.0	4.39	4.39	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.37	4.37	4.37	4.37	**98.0**
97.9	4.40	4.39	4.39	4.39	4.39	4.39	4.39	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	97.9
97.8	4.40	4.40	4.40	4.40	4.40	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.38	4.38	97.8
97.7	4.41	4.41	4.41	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.39	4.39	4.39	4.39	4.39	97.7
97.6	4.42	4.41	4.41	4.41	4.41	4.41	4.41	4.40	4.40	4.40	4.40	4.40	4.40	4.40	4.39	97.6
97.5	4.42	4.42	4.42	4.42	4.42	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.40	4.40	4.40	97.5
97.4	4.43	4.43	4.43	4.42	4.42	4.42	4.42	4.42	4.42	4.41	4.41	4.41	4.41	4.41	4.41	97.4
97.3	4.44	4.44	4.43	4.43	4.43	4.43	4.43	4.42	4.42	4.42	4.42	4.42	4.42	4.41	4.41	97.3
97.2	4.44	4.44	4.44	4.44	4.44	4.43	4.43	4.43	4.43	4.43	4.43	4.42	4.42	4.42	4.42	97.2
97.1	4.45	4.45	4.45	4.45	4.44	4.44	4.44	4.44	4.44	4.43	4.43	4.43	4.43	4.43	4.43	97.1
97.0	4.46	4.46	4.45	4.45	4.45	4.45	4.45	4.44	4.44	4.44	4.44	4.44	4.43	4.43	4.43	**97.0**
96.9	4.47	4.46	4.46	4.46	4.46	4.45	4.45	4.45	4.45	4.45	4.44	4.44	4.44	4.44	4.44	96.9
96.8	4.47	4.47	4.47	4.47	4.46	4.46	4.46	4.46	4.46	4.45	4.45	4.45	4.45	4.44	4.44	96.8
96.7	4.48	4.48	4.48	4.47	4.47	4.47	4.47	4.46	4.46	4.46	4.46	4.46	4.45	4.45	4.45	96.7
96.6	4.49	4.48	4.48	4.48	4.48	4.47	4.47	4.47	4.47	4.47	4.46	4.46	4.46	4.46	4.46	96.6
96.5	4.50	4.49	4.49	4.49	4.48	4.48	4.48	4.48	4.48	4.47	4.47	4.47	4.47	4.46	4.46	96.5
96.4	4.50	4.50	4.50	4.49	4.49	4.49	4.49	4.48	4.48	4.48	4.48	4.47	4.47	4.47	4.47	96.4
96.3	4.51	4.51	4.50	4.50	4.50	4.49	4.49	4.49	4.49	4.49	4.48	4.48	4.48	4.48	4.48	96.3
96.2	4.52	4.51	4.51	4.51	4.50	4.50	4.50	4.50	4.49	4.49	4.49	4.49	4.49	4.48	4.48	96.2
96.1	4.52	4.52	4.52	4.51	4.51	4.51	4.51	4.50	4.50	4.50	4.50	4.49	4.49	4.49	4.49	96.1
96.0	4.53	4.53	4.52	4.52	4.52	4.51	4.51	4.51	4.51	4.51	4.50	4.50	4.50	4.50	4.49	**96.0**
95.9	4.54	4.54	4.53	4.53	4.53	4.52	4.52	4.52	4.51	4.51	4.51	4.51	4.50	4.50	4.50	95.9
95.8	4.55	4.54	4.54	4.53	4.53	4.53	4.53	4.52	4.52	4.52	4.52	4.51	4.51	4.51	4.51	95.8
95.7	4.55	4.55	4.55	4.54	4.54	4.54	4.53	4.53	4.53	4.53	4.52	4.52	4.52	4.52	4.51	95.7
95.6	4.56	4.56	4.55	4.55	4.55	4.54	4.54	4.54	4.53	4.53	4.53	4.53	4.52	4.52	4.52	95.6
95.5	4.57	4.56	4.56	4.56	4.55	4.55	4.55	4.54	4.54	4.54	4.54	4.53	4.53	4.53	4.53	95.5
95.4	4.58	4.57	4.57	4.56	4.56	4.56	4.55	4.55	4.55	4.55	4.54	4.54	4.54	4.53	4.53	95.4
95.3	4.58	4.58	4.57	4.57	4.57	4.56	4.56	4.56	4.55	4.55	4.55	4.54	4.54	4.54	4.54	95.3
95.2	4.59	4.59	4.58	4.58	4.57	4.57	4.57	4.56	4.56	4.56	4.55	4.55	4.55	4.55	4.55	95.2
95.1	4.60	4.59	4.59	4.58	4.58	4.58	4.57	4.57	4.57	4.57	4.56	4.56	4.56	4.55	4.55	95.1
95.0	4.60	4.60	4.60	4.59	4.59	4.58	4.58	4.58	4.57	4.57	4.57	4.56	4.56	4.56	4.56	**95.0**

4¼% Bond—Interest payable semi-annually

RATES OF INTEREST REALIZED

if purchased at prices indicated and held to maturity

Price	8	8½	9	9½	10	10½	11	11½	12	12½	13	13½	14	14½	15	Price
	YEARS TO RUN															
95.0	5.02	4.98	4.94	4.91	4.89	4.86	4.84	4.82	4.80	4.79	4.77	4.76	4.74	4.73	4.72	**95.0**
94.9	5.03	4.99	4.96	4.93	4.90	4.88	4.85	4.83	4.82	4.80	4.78	4.77	4.75	4.74	4.73	94.9
94.8	5.05	5.01	4.97	4.94	4.91	4.89	4.87	4.85	4.83	4.81	4.79	4.78	4.76	4.75	4.74	94.8
94.7	5.06	5.02	4.99	4.96	4.93	4.90	4.88	4.86	4.84	4.82	4.80	4.79	4.77	4.76	4.75	94.7
94.6	5.08	5.04	5.00	4.97	4.94	4.92	4.89	4.87	4.85	4.83	4.81	4.80	4.78	4.77	4.76	94.6
94.5	5.10	5.05	5.02	4.98	4.95	4.93	4.90	4.88	4.86	4.84	4.82	4.81	4.79	4.78	4.77	94.5
94.4	5.11	5.07	5.03	5.00	4.97	4.94	4.92	4.89	4.87	4.85	4.83	4.82	4.80	4.79	4.78	94.4
94.3	5.13	5.08	5.05	5.01	4.98	4.95	4.93	4.90	4 88	4.86	4.85	4.83	4.81	4.80	4.79	94.3
94.2	5.14	5.10	5.06	5.03	4.99	4.97	4.94	4.92	4.90	4.88	4.86	4.84	4.83	4.81	4.80	94.2
94.1	5.16	5.11	5.08	5.04	5.01	4.98	4.95	4.93	4.91	4.89	4.87	4.85	4.84	4.82	4.81	94.1
94.0	5.18	5.13	5.09	5.05	5.02	4.99	4.96	4.94	4.92	4.90	4.88	4.86	4.85	4.83	4.82	**94.0**
93.9	5.19	5.15	5.10	5.07	5.03	5.00	4.98	4.95	4.93	4.91	4.89	4.87	4.86	4.84	4.83	93.9
93.8	5.21	5.16	5.12	5.08	5.05	5.02	4.99	4.96	4.94	4.92	4.90	4.88	4.87	4.85	4.84	93.8
93.7	5.22	5.18	5.13	5.10	5.06	5.03	5.00	4.98	4.95	4.93	4.91	4.89	4.88	4.86	4.85	93.7
93.6	5.24	5.19	5.15	5.11	5.07	5.04	5.01	4.99	4.96	4.94	4.92	4.90	4.89	4.87	4.86	93.6
93.5	5.26	5.21	5.16	5.12	5 09	5.06	5.03	5.00	4.98	4.95	4.93	4.92	4.90	4.88	4.87	93.5
93.4		5.22	5.18	5.14	5.10	5.07	5.04	5.01	4.99	4.97	4.94	4.93	4.91	4.89	4.87	93.4
93.3		5.24	5.19	5.15	5.11	5.08	5.05	5.02	5.00	4.98	4.96	4.94	4.92	4.90	4.88	93.3
93.2		5.25	5.21	5.16	5.13	5.09	5.06	5.04	5.01	4.99	4.97	4.95	4.93	4.91	4.89	93.2
93.1			5.22	5.18	5.14	5.11	5.08	5.05	5.02	5.00	4.98	4.96	4.94	4.92	4.90	93.1
93.0			5.24	5.19	5.15	5.12	5.09	5.06	5.03	5.01	4.99	4.97	4.95	4.93	4.91	**93.0**
92.9			5.25	5.21	5.17	5.13	5.10	5.07	5.05	5.02	5.00	4.98	4.96	4.94	4.92	92.9
92.8				5.22	5.18	5.15	5.11	5.08	5.06	5.03	5.01	4.99	4.97	4.95	4.93	92.8
92.7				5.23	5.19	5.16	5.13	5.10	5.07	5.04	5.02	5.00	4.98	4.96	4.94	92.7
92.6				5.25	5.21	5.17	5.14	5.11	5.08	5.06	5.03	5.01	4.99	4.97	4.95	92.6
92.5					5.22	5.19	5.15	5.12	5.09	5.07	5.04	5.02	5.00	4.98	4.97	92.5
92.4					5.24	5.20	5.16	5.13	5.10	5.08	5.06	5.03	5.01	4.99	4.98	92.4
92.3					5.25	5.21	5.18	5.15	5.12	5.09	5.07	5.04	5.02	5.00	4.99	92.3
92.2						5.22	5.19	5.16	5.13	5.10	5.08	5.05	5.03	5.01	5.00	92.2
92.1						5.24	5.20	5.17	5.14	5.11	5.09	5.07	5.04	5.02	5.01	92.1
92.0						5.25	5.21	5.18	5.15	5.12	5.10	5.08	5.05	5.03	5.02	**92.0**
91.9							5.23	5.19	5.16	5.14	5.11	5.09	5.06	5.04	5.03	91.9
91.8							5.24	5.21	5.18	5.15	5.12	5.10	5.08	5.05	5.04	91.8
91.7							5.25	5.22	5.19	5.16	5.13	5.11	5.09	5.07	5.05	91.7
91.6								5.23	5.20	5.17	5.14	5.12	5.10	5.08	5.06	91.6
91.5								5.24	5.21	5.18	5.16	5.13	5.11	5.09	5.07	91.5
91.4								5.26	5.22	5.19	5.17	5.14	5.12	5.10	5.08	91.4
91.3									5.24	5.21	5.18	5.15	5.13	5.11	5.09	91.3
91.2									5.25	5.22	5.19	5.16	5.14	5.12	5.10	91.2
91.1										5.23	5.20	5.17	5.15	5.13	5.11	91.1
91.0										5.24	5.21	5.18	5.16	5.14	5.12	**91.0**
90.9										5.25	5.22	5.20	5.17	5.15	5.13	90.9
90.8											5.23	5.21	5.18	5.16	5.14	90.8
90.7											5.25	5.22	5.19	5.17	5.15	90.7
90.6												5.23	5.20	5.18	5.16	90.6
90.5												5.24	5.21	5.19	5 17	90.5
90.4												5.25	5.22	5.20	5.18	90.4
90.3													5.24	5.21	5.19	90.3
90.2													5.25	5.22	5.20	90.2
90.1														5.23	5.21	90.1
90.0														5.24	5.22	**90.0**

4¼% Bond—Interest payable semi-annually

RATES OF INTEREST REALIZED

if purchased at prices indicated and held to maturity

Price	15½	16	16½	17	17½	18	18½	19	19½	20	20½	21	21½	22	22½	Price
	YEARS TO RUN															
95.0	4.71	4.70	4.69	4.68	4.67	4.66	4.66	4.65	4.64	4.64	4.63	4.62	4.62	4.61	4.61	**95.0**
94.9	4.72	4.71	4.70	4.69	4.68	4.67	4.66	4.66	4.65	4.64	4.64	4.63	4.63	4.62	4.62	94.9
94.8	4.73	4.72	4.71	4.70	4.69	4.68	4.67	4.66	4.66	4.65	4.65	4.64	4.63	4.63	4.62	94.8
94.7	4.74	4.73	4.72	4.71	4.70	4.69	4.68	4.67	4.67	4.66	4.65	4.65	4.64	4.64	4.63	94.7
94.6	4.75	4.74	4.72	4.72	4.71	4.70	4.69	4.68	4.67	4.67	4.66	4.66	4.65	4.64	4.64	94.6
94.5	4.76	4.75	4.73	4.73	4.72	4.71	4.70	4.69	4.68	4.68	4.67	4.66	4.66	4.65	4.65	94.5
94.4	4.77	4.75	4.74	4.73	4.72	4.72	4.71	4.70	4.69	4.68	4.68	4.67	4.66	4.66	4.65	94.4
94.3	4.78	4.76	4.75	4.74	4.73	4.72	4.71	4.71	4.70	4.69	4.68	4.68	4.67	4.67	4.66	94.3
94.2	4.78	4.77	4.76	4.75	4.74	4.73	4.72	4.72	4.71	4.70	4.69	4.69	4.68	4.67	4.67	94.2
94.1	4.79	4.78	4.77	4.76	4.75	4.74	4.73	4.72	4.72	4.71	4.70	4.69	4.69	4.68	4.68	94.1
94.0	4.80	4.79	4.78	4.77	4.76	4.75	4.74	4.73	4.72	4.72	4.71	4.70	4.70	4.69	4.68	**94.0**
93.9	4.81	4.80	4.79	4.78	4.77	4.76	4.75	4.74	4.73	4.72	4.72	4.71	4.70	4.70	4.69	93.9
93.8	4.82	4.81	4.80	4.79	4.78	4.77	4.76	4.75	4.74	4.73	4.72	4.72	4.71	4.71	4.70	93.8
93.7	4.83	4.82	4.81	4.80	4.79	4.78	4.77	4.76	4.75	4.74	4.73	4.73	4.72	4.71	4.71	93.7
93.6	4.84	4.83	4.82	4.81	4.80	4.79	4.77	4.77	4.76	4.75	4.73	4.74	4.73	4.72	4.71	93.6
93.5	4.85	4.84	4.83	4.82	4.80	4.79	4.78	4.77	4.77	4.76	4.75	4.74	4.74	4.73	4.72	93.5
93.4	4.86	4.85	4.84	4.82	4.81	4.80	4.79	4.78	4.77	4.77	4.76	4.75	4.74	4.74	4.73	93.4
93.3	4.87	4.86	4.84	4.83	4.82	4.81	4.80	4.79	4.78	4.77	4.77	4.76	4.75	4.74	4.74	93.3
93.2	4.88	4.87	4.85	4.84	4.83	4.82	4.81	4.80	4.79	4.78	4.77	4.77	4.76	4.75	4.74	93.2
93.1	4.89	4.88	4.86	4.85	4.84	4.83	4.82	4.81	4.80	4.79	4.78	4.77	4.77	4.76	4.75	93.1
93.0	4.90	4.89	4.87	4.86	4.85	4.84	4.83	4.82	4.81	4.80	4.79	4.78	4.77	4.77	4.76	**93.0**
92.9	4.91	4.90	4.88	4.87	4.86	4.85	4.83	4.82	4.82	4.81	4.80	4.79	4.78	4.77	4.77	92.9
92.8	4.92	4.91	4.89	4.88	4.87	4.86	4.84	4.83	4.82	4.81	4.81	4.80	4.79	4.78	4.78	92.8
92.7	4.93	4.91	4.90	4.89	4.88	4.86	4.85	4.84	4.83	4.82	4.81	4.81	4.80	4.79	4.78	92.7
92.6	4.94	4.92	4.91	4.90	4.88	4.87	4.86	4.85	4.84	4.83	4.82	4.81	4.81	4.80	4.79	92.6
92.5	4.95	4.93	4.92	4.91	4.89	4.88	4.87	4.86	4.85	4.84	4.83	4.82	4.81	4.81	4.80	92.5
92.4	4.96	4.94	4.93	4.92	4.90	4.89	4.88	4.87	4.86	4.85	4.84	4.83	4.82	4.81	4.81	92.4
92.3	4.97	4.95	4.94	4.92	4.91	4.90	4.89	4.88	4.87	4.86	4.85	4.84	4.83	4.82	4.81	92.3
92.2	4.98	4.96	4.95	4.93	4.92	4.91	4.89	4.88	4.87	4.86	4.85	4.85	4.84	4.83	4.82	92.2
92.1	4.99	4.97	4.96	4.94	4.93	4.92	4.90	4.89	4.88	4.87	4.86	4.85	4.85	4.84	4.83	92.1
92.0	5.00	4.98	4.97	4.95	4.94	4.93	4.91	4.90	4.89	4.88	4.87	4.86	4.85	4.85	4.84	**92.0**
91.9	5.01	4.99	4.98	4.96	4.95	4.94	4.92	4.91	4.90	4.89	4.88	4.87	4.86	4.85	4.85	91.9
91.8	5.02	5.00	4.99	4.97	4.96	4.94	4.93	4.92	4.91	4.90	4.89	4.88	4.87	4.86	4.85	91.8
91.7	5.03	5.01	4.99	4.98	4.97	4.95	4.94	4.93	4.92	4.91	4.90	4.89	4.88	4.87	4.86	91.7
91.6	5.04	5.02	5.00	4.99	4.97	4.96	4.95	4.94	4.92	4.91	4.90	4.89	4.89	4.88	4.87	91.6
91.5	5.05	5.03	5.01	5.00	4.98	4.97	4.96	4.95	4.93	4.92	4.91	4.90	4.89	4.89	4.88	91.5
91.4	5.06	5.04	5.02	5.01	4.99	4.98	4.97	4.95	4.94	4.93	4.92	4.91	4.90	4.89	4.88	91.4
91.3	5.07	5.05	5.03	5.02	5.00	4.99	4.98	4.96	4.95	4.94	4.93	4.92	4.91	4.90	4.89	91.3
91.2	5.08	5.06	5.04	5.03	5.01	5.00	4.98	4.97	4.96	4.95	4.94	4.93	4.92	4.91	4.90	91.2
91.1	5.09	5.07	5.05	5.04	5.02	5.01	4.99	4.98	4.97	4.96	4.95	4.94	4.93	4.92	4.91	91.1
91.0	5.10	5.08	5.06	5.05	5.03	5.02	5.00	4.99	4.98	4.96	4.95	4.94	4.93	4.92	4.92	**91.0**
90.9	5.11	5.09	5.07	5.06	5.04	5.03	5.01	5.00	4.98	4.97	4.96	4.95	4.94	4.93	4.92	90.9
90.8	5.12	5.10	5.08	5.06	5.05	5.03	5.02	5.01	4.99	4.98	4.97	4.96	4.95	4.94	4.93	90.8
90.7	5.13	5.11	5.09	5.07	5.06	5.04	5.03	5.01	5.00	4.99	4.98	4.97	4.96	4.95	4.94	90.7
90.6	5.14	5.12	5.10	5.08	5.07	5.05	5.04	5.02	5.01	5.00	4.99	4.98	4.97	4.96	4.95	90.6
90.5	5.15	5.13	5.11	5.09	5.08	5.06	5.05	5.03	5.02	5.01	5.00	4.99	4.98	4.96	4.96	90.5
90.4	5.16	5.14	5.12	5.10	5.09	5.07	5.06	5.04	5.03	5.02	5.00	4.99	4.98	4.97	4.96	90.4
90.3	5.17	5.15	5.13	5.11	5.09	5.08	5.07	5.05	5.04	5.02	5.01	5.00	4.99	4.98	4.97	90.3
90.2	5.18	5.16	5.14	5.12	5.10	5.09	5.07	5.06	5.05	5.03	5.02	5.01	5.00	4.99	4.98	90.2
90.1	5.19	5.17	5.15	5.13	5.11	5.10	5.08	5.07	5.06	5.04	5.03	5.02	5.01	5.00	4.99	90.1
90.0	5.20	5.18	5.16	5.14	5.12	5.11	5.09	5.08	5.06	5.05	5.04	5.03	5.02	5.00	4.99	**90.0**

4¼% Bond—Interest payable semi-annually
RATES OF INTEREST REALIZED
if purchased at prices indicated and held to maturity

Price	23	23½	24	24½	25	25½	26	26½	27	27½	28	28½	29	29½	30	Price
	YEARS TO RUN															
95.0	4.60	4.60	4.60	4.59	4.59	4.58	4.58	4.58	4.57	4.57	4.57	4.56	4.56	4.56	4.56	**95.0**
94.9	4.61	4.61	4.60	4.60	4.60	4.59	4.59	4.58	4.58	4.58	4.57	4.57	4.57	4.57	4.56	94.9
94.8	4.62	4.61	4.61	4.61	4.60	4.60	4.59	4.59	4.59	4.59	4.58	4.58	4.57	4.57	4.57	94.8
94.7	4.63	4.62	4.62	4.61	4.61	4.61	4.60	4.60	4.59	4.59	4.59	4.58	4.58	4.58	4.58	94.7
94.6	4.63	4.63	4.62	4.62	4.62	4.61	4.61	4.60	4.60	4.60	4.59	4.59	4.59	4.59	4.58	94.6
94.5	4.64	4.64	4.63	4.63	4.62	4.62	4.62	4.61	4.61	4.61	4.60	4.60	4.59	4.59	4.59	94.5
94.4	4.65	4.64	4.64	4.63	4.63	4.63	4.62	4.62	4.61	4.61	4.61	4.60	4.60	4.60	4.60	94.4
94.3	4.66	4.65	4.65	4.64	4.64	4.63	4.63	4.63	4.62	4.62	4.61	4.61	4.61	4.60	4.60	94.3
94.2	4.66	4.66	4.65	4.65	4.64	4.64	4.64	4.63	4.63	4.62	4.62	4.62	4.61	4.61	4.61	94.2
94.1	4.67	4.66	4.66	4.66	4.65	4.65	4.64	4.64	4.64	4.63	4.63	4.62	4.62	4.62	4.62	94.1
94.0	4.68	4.67	4.67	4.66	4.66	4.65	4.65	4.65	4.64	4.64	4.63	4.63	4.63	4.62	4.62	**94.0**
93.9	4.69	4.68	4.67	4.67	4.67	4.66	4.66	4.65	4.65	4.64	4.64	4.64	4.63	4.63	4.63	93.9
93.8	4.69	4.69	4.68	4.68	4.67	4.67	4.66	4.66	4.66	4.65	4.65	4.64	4.64	4.64	4.64	93.8
93.7	4.70	4.69	4.69	4.68	4.68	4.68	4.67	4.67	4.66	4.66	4.65	4.65	4.65	4.64	4.64	93.7
93.6	4.71	4.70	4.70	4.69	4.69	4.68	4.68	4.67	4.67	4.67	4.66	4.66	4.65	4.65	4.65	93.6
93.5	4.72	4.71	4.70	4.70	4.69	4.69	4.68	4.68	4.68	4.67	4.67	4.66	4.66	4.66	4.66	93.5
93.4	4.72	4.72	4.71	4.71	4.70	4.70	4.69	4.69	4.68	4.68	4.67	4.67	4.67	4.66	4.66	93.4
93.3	4.73	4.73	4.72	4.71	4.71	4.70	4.70	4.69	4.69	4.69	4.68	4.68	4.67	4.67	4.67	93.3
93.2	4.74	4.73	4.73	4.72	4.72	4.71	4.70	4.70	4.70	4.69	4.69	4.68	4.68	4.68	4.67	93.2
93.1	4.75	4.74	4.73	4.73	4.72	4.72	4.71	4.71	4.70	4.70	4.70	4.69	4.69	4.68	4.68	93.1
93.0	4.75	4.75	4.74	4.74	4.73	4.72	4.72	4.71	4.71	4.71	4.70	4.70	4.69	4.69	4.69	**93.0**
92.9	4.76	4.76	4.75	4.74	4.74	4.73	4.73	4.72	4.72	4.71	4.71	4.70	4.70	4.70	4.69	92.9
92.8	4.77	4.76	4.76	4.75	4.74	4.74	4.73	4.73	4.72	4.72	4.72	4.71	4.71	4.70	4.70	92.8
92.7	4.78	4.77	4.76	4.76	4.75	4.75	4.74	4.74	4.73	4.73	4.72	4.72	4.71	4.71	4.71	92.7
92.6	4.78	4.78	4.77	4.77	4.76	4.75	4.75	4.74	4.74	4.73	4.73	4.73	4.72	4.72	4.71	92.6
92.5	4.79	4.79	4.78	4.77	4.77	4.76	4.76	4.75	4.75	4.74	4.74	4.73	4.73	4.72	4.72	92.5
92.4	4.80	4.79	4.79	4.78	4.77	4.77	4.76	4.76	4.75	4.75	4.74	4.74	4.73	4.73	4.73	92.4
92.3	4.81	4.80	4.79	4.79	4.78	4.78	4.77	4.76	4.76	4.76	4.75	4.75	4.74	4.74	4.73	92.3
92.2	4.81	4.81	4.80	4.80	4.79	4.78	4.78	4.77	4.77	4.76	4.76	4.75	4.75	4.74	4.74	92.2
92.1	4.82	4.81	4.81	4.80	4.80	4.79	4.78	4.78	4.77	4.77	4.76	4.76	4.76	4.75	4.75	92.1
92.0	4.83	4.82	4.82	4.81	4.80	4.80	4.79	4.79	4.78	4.78	4.77	4.77	4.76	4.76	4.75	**92.0**
91.9	4.84	4.83	4.82	4.82	4.81	4.81	4.80	4.79	4.79	4.78	4.78	4.77	4.77	4.76	4.76	91.9
91.8	4.85	4.84	4.83	4.82	4.82	4.81	4.81	4.80	4.79	4.79	4.78	4.78	4.78	4.77	4.77	91.8
91.7	4.85	4.85	4.84	4.83	4.83	4.82	4.81	4.81	4.80	4.80	4.79	4.79	4.78	4.78	4.77	91.7
91.6	4.86	4.85	4.85	4.84	4.83	4.83	4.82	4.81	4.81	4.80	4.80	4.79	4.79	4.78	4.78	91.6
91.5	4.87	4.86	4.85	4.85	4.84	4.83	4.83	4.82	4.82	4.81	4.81	4.80	4.80	4.79	4.79	91.5
91.4	4.88	4.87	4.86	4.85	4.85	4.84	4.84	4.83	4.82	4.82	4.81	4.81	4.80	4.80	4.79	91.4
91.3	4.88	4.88	4.87	4.86	4.85	4.85	4.84	4.84	4.83	4.83	4.82	4.81	4.81	4.80	4.80	91.3
91.2	4.89	4.88	4.88	4.87	4.86	4.86	4.85	4.84	4.84	4.83	4.83	4.82	4.81	4.81	4.81	91.2
91.1	4.90	4.89	4.88	4.88	4.87	4.86	4.86	4.85	4.84	4.84	4.83	4.83	4.82	4.82	4.81	91.1
91.0	4.91	4.90	4.89	4.88	4.88	4.87	4.86	4.86	4.85	4.85	4.84	4.83	4.83	4.82	4.82	**91.0**
90.9	4.92	4.91	4.90	4.89	4.88	4.88	4.87	4.87	4.86	4.85	4.85	4.84	4.84	4.83	4.83	90.9
90.8	4.92	4.92	4.91	4.90	4.89	4.88	4.88	4.87	4.87	4.86	4.85	4.85	4.84	4.84	4.83	90.8
90.7	4.93	4.92	4.91	4.91	4.90	4.89	4.89	4.88	4.87	4.87	4.86	4.86	4.85	4.85	4.84	90.7
90.6	4.94	4.93	4.92	4.91	4.91	4.90	4.89	4.89	4.88	4.87	4.87	4.86	4.86	4.85	4.85	90.6
90.5	4.95	4.94	4.93	4.92	4.91	4.91	4.90	4.89	4.89	4.88	4.88	4.87	4.86	4.86	4.86	90.5
90.4	4.95	4.95	4.94	4.93	4.92	4.91	4.91	4.90	4.90	4.89	4.88	4.88	4.87	4.87	4.86	90.4
90.3	4.96	4.95	4.95	4.94	4.93	4.92	4.91	4.91	4.90	4.90	4.89	4.88	4.88	4.87	4.87	90.3
90.2	4.97	4.96	4.95	4.94	4.94	4.93	4.92	4.92	4.91	4.90	4.90	4.89	4.89	4.88	4.88	90.2
90.1	4.98	4.97	4.96	4.95	4.94	4.94	4.93	4.92	4.92	4.91	4.90	4.90	4.89	4.89	4.88	90.1
90.0	4.99	4.98	4.97	4.96	4.95	4.94	4.94	4.93	4.92	4.92	4.91	4.91	4.90	4.89	4.89	**90.0**

$4\frac{3}{4}$% Bond—Interest Payable semi-annually

RATES OF INTEREST REALIZED

if purchased at prices indicated and held to maturity

Price	YEARS TO RUN															Price
	1 mo.	2 mos.	4 mos.	6 mos.	8 mos.	10 mos.	1	1½	2	2½	3	3½	4	4½	5	
100.0	4.70	4.71	4.73	4.75	4.74	4.74	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	**100.0**
99.9	5.63	5.32	5.04	4.95	4.89	4.87	4.85	4.82	4.80	4.79	4.79	4.78	4.78	4.78	4.77	99.9
99.8			5.34	5.16	5.05	4.99	4.96	4.89	4.86	4.84	4.82	4.81	4.81	4.80	4.80	99.8
99.7				5.37	5.20	5.11	5.06	4.96	4.91	4.88	4.86	4.84	4.83	4.83	4.82	99.7
99.6					5.36	5.24	5.17	5.03	4.96	4.92	4.90	4.88	4.86	4.85	4.84	99.6
99.5						5.36	5.27	5.10	5.02	4.97	4.93	4.91	4.89	4.88	4.86	99.5
99.4								5.17	5.07	5.01	4.97	4.94	4.92	4.90	4.89	99.4
99.3								5.24	5.12	5.05	5.00	4.97	4.95	4.93	4.91	99.3
99.2								5.31	5.18	5.10	5.04	5.00	4.97	4.95	4.93	99.2
99.1									5.23	5.14	5.08	5.03	5.00	4.98	4.96	99.1
99.0									5.28	5.18	5.11	5.07	5.03	5.00	4.98	**99.0**
98.9										5.23	5.15	5.10	5.06	5.03	5.00	98.9
98.8										5.27	5.19	5.13	5.09	5.05	5.02	98.8
98.7											5.22	5.16	5.11	5.08	5.05	98.7
98.6											5.26	5.19	5.14	5.10	5.07	98.6
98.5												5.22	5.17	5.13	5.09	98.5
98.4												5.26	5.20	5.15	5.12	98.4
98.3													5.23	5.18	5.14	98.3
98.2													5.26	5.20	5.16	98.2
98.1														5.23	5.19	98.1
98.0														5.25	5.21	**98.0**
97.9															5.23	97.9
97.8															5.26	97.8

4¾% Bond—Interest payable semi-annually

RATES OF INTEREST REALIZED

if purchased at prices indicated and held to maturity

Price	YEARS TO RUN															Price
	1 mo.	2 mos.	4 mos.	6 mos.	8 mos.	10 mos.	1 yr.	1½	2	2½	3	3½	4	4½	5	
105.0											2.99	3.23	3.40	3.54	3.65	**105.0**
104.9											3.03	3.26	3.43	3.56	3.67	104.9
104.8											3.06	3.29	3.45	3.59	3.69	104.8
104.7											3.10	3.32	3.48	3.61	3.71	104.7
104.6											3.13	3.35	3.51	3.63	3.73	104.6
104.5											3.17	3.38	3.53	3.66	3.75	104.5
104.4											3.20	3.41	3.56	3.68	3.78	104.4
104.3											3.23	3.44	3.59	3.70	3.80	104.3
104.2										2.99	3.27	3.47	3.61	3.73	3.82	104.2
104.1										3.04	3.30	3.50	3.64	3.75	3.84	104.1
104.0										3.08	3.34	3.53	3.67	3.78	3.86	**104.0**
103.9										3.12	3.37	3.56	3.69	3.80	3.88	103.9
103.8										3.16	3.41	3.59	3.72	3.82	3.91	103.8
103.7										3.20	3.44	3.62	3.75	3.85	3.93	103.7
103.6										3.24	3.48	3.65	3.77	3.87	3.95	103.6
103.5										3.28	3.51	3.68	3.80	3.89	3.97	103.5
103.4									2.99	3.32	3.54	3.71	3.82	3.92	3.99	103.4
103.3									3.04	3.36	3.58	3.74	3.85	3.94	4.01	103.3
103.2									3.09	3.40	3.61	3.77	3.88	3.97	4.04	103.2
103.1									3.14	3.44	3.65	3.80	3.91	3.99	4.06	103.1
103.0									3.19	3.49	3.68	3.83	3.93	4.01	4.08	**103.0**
102.9									3.24	3.53	3.72	3.86	3.96	4.04	4.10	102.9
102.8									3.29	3.57	3.75	3.89	3.99	4.06	4.12	102.8
102.7									3.34	3.61	3.79	3.92	4.01	4.09	4.15	102.7
102.6								2.97	3.39	3.65	3.82	3.95	4.04	4.11	4.17	102.6
102.5								3.03	3.45	3.69	3.86	3.98	4.07	4.13	4.19	102.5
102.4								3.10	3.50	3.74	3.90	4.01	4.09	4.16	4.21	102.4
102.3								3.17	3.55	3.78	3.93	4.04	4.12	4.18	4.23	102.3
102.2								3.24	3.60	3.82	3.97	4.07	4.15	4.21	4.26	102.2
102.1								3.30	3.65	3.86	4.00	4.10	4.17	4.23	4.28	102.1
102.0								3.37	3.70	3.90	4.04	4.13	4.20	4.26	4.30	**102.0**
101.9								3.44	3.76	3.94	4.07	4.16	4.23	4.28	4.32	101.9
101.8							2.91	3.51	3.81	3.99	4.11	4.19	4.26	4.30	4.35	101.8
101.7							3.01	3.58	3.86	4.03	4.14	4.22	4.28	4 33	4.37	101.7
101.6							3.11	3.64	3.91	4.07	4.18	4.25	4.31	4.35	4.39	101.6
101.5						2.91	3.21	3.71	3.96	4.11	4.21	4.28	4.34	4.38	4.41	101.5
101.4						3.03	3.32	3.78	4.02	4.15	4.25	4.31	4.37	4.40	4.43	101.4
101.3						3.15	3.42	3.85	4.07	4.20	4.28	4.35	4.39	4.43	4.46	101.3
101.2					2.91	3.27	3.52	3.92	4.12	4.24	4.32	4.38	4.42	4.45	4.48	101.2
101.1					3.06	3.39	3.62	3.99	4.17	4.28	4.35	4.41	4.45	4.48	4.50	101.1
101.0					3.22	3.52	3.72	4.06	4.22	4.32	4.39	4.44	4.47	4.50	4.52	**101.0**
100.9				2.92	3.37	3.64	3.82	4.13	4.28	4.37	4.43	4.47	4.50	4.53	4.55	100.9
100.8				3.13	3.52	3.76	3.93	4.19	4.33	4.41	4.46	4.50	4.53	4.55	4.57	100.8
100.7				3.33	3.67	3.88	4.03	4.26	4.38	4.45	4.50	4.53	4.56	4.58	4.59	100.7
100.6			2.92	3.53	3.82	4.00	4.13	4.33	4.43	4.49	4.53	4.56	4.58	4.60	4.61	100.6
100.5			3.22	3.73	3.97	4.13	4.23	4.40	4.49	4.54	4.57	4.59	4.61	4.63	4.64	100.5
100.4			3.52	3.93	4.13	4.25	4.34	4.47	4.54	4.58	4.61	4.63	4.64	4.65	4.66	100.4
100.3		2.91	3.82	4.14	4.28	4.37	4.44	4.54	4.59	4.62	4.64	4.66	4.67	4.68	4.68	100.3
100.2	2.31	3.51	4.12	4.34	4.43	4.50	4.54	4.61	4.64	4.66	4.68	4.69	4.69	4.70	4.70	100.2
100.1	3.50	4.11	4.43	4.55	4.59	4.62	4.65	4.68	4.70	4.71	4.71	4.72	4.72	4.73	4.73	100.1
100.0	4.70	4.71	4.73	4.75	4.74	4.74	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	4.75	**100.0**

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BANKERS TRUST COMPANY'S PUBLICATIONS

"OUR PUBLIC DEBT" is the first book in a series of important publications which the Company purposes issuing from time to time for the information of its clients. The Company now has in preparation for early issue an exhaustive study of the railroad situation. This will be followed by historical and analytical studies of the public debts and resources of the principal European nations. Announcements in regard to other publications will be made later. The following publications now in print or soon to be issued may be had upon request:

TWENTY-FOUR BILLION—Issued in 1918

The aim of this pamphlet is to determine a fair distribution of the war burden among the 20,000,000 families of the nation.

THE WAR FINANCE BILL OF 1919

Carefully annotated for the convenience of taxpayers.

OUR PUBLIC DEBT

A history and description.

LIBERTY BOND VALUE TABLES

These tables give income yields for Liberty bonds at 3½%, 4% and 4¼% and for Notes and Certificates at 3¾%, 4½% and 4¾%.

THE VICTORY LIBERTY LOAN ACT

An annotated edition, with the other Acts of Congress regarding the outstanding public debt.

TO THE READER

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